



healthy landscapes

clean water starts at home

Livestock on Small Acreages: Protecting Water Resources and Health

A Train-the-Trainer Extension Education Program

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Situation

Throughout Rhode Island and New England, small acreage livestock and horse owners often "slip through the cracks" for receiving education and assistance that encourages the adoption of livestock Best Management Practices (BMPs) that protect water quality. Properties usually consist of small residential lots that are close to water resources causing problems with manure management and animal stocking rates. Furthermore, this target audience often has different goals, conditions and resources compared to commercial livestock farms.

Objectives

1. Identify barriers and benefits to adoption of livestock management practices for water quality protection.
2. Design an adoption-outreach Extension education program that minimizes the barriers and maximizes the benefits to adoption of BMPs for water quality protection.
3. Determine the effectiveness of the train-the-trainer model to influence behavior norms of livestock management practices among the target audience.
4. Recruit and train 20 volunteers by the end of year two.
- 95% of trained volunteers and the target audience will indicate an increased awareness and knowledge of hydrology, the water cycle and the interaction between watersheds and aquifers by the end of year three.
- 95% of trained volunteers and the target audience will indicate an increased awareness and knowledge of pollution and health risks associated with small acreage livestock activities by the end of year three.
- 90% of trained volunteers and the target audience will be capable of identifying the most common pollution and health risks associated with livestock activities on their properties by the end of year three.
- 90% of trained volunteers and the target audience will be capable of identifying appropriate BMPs to minimize pollution and health risks associated with small acreage livestock activities.
- 90% of trained volunteers and the target audience will consider adopting at least one BMP for water resource protection by the end of year three.
- 50% of trained volunteers and the target audience will adopt at least 1 BMP by the end of year 3.
- 80% of trained volunteers (10 teams of 2 volunteers per team) will provide a minimum of 20 hours of direct educational programming to their club members, families and other affiliated organizations by the end of year three.
- 75% of trained volunteers will indicate that they intend to provide at least 10 hours of education and outreach programming to their clubs and other affiliated organizations for an additional 2 years beyond the end of the project.
- 90% of trained volunteers will increase their public presentation skills and express increased confidence in their abilities to teach in a small group environment by the end of year three.

Adoption-Outreach Education Program

The University of Rhode Island Cooperative Extension (URI CE) Home*A*Syst and 4-H Programs, and URI Department of Fisheries, Animal and Veterinary Science along with assistance from the URI Department of Communication Studies, are developing an adoption-outreach pollution prevention education program for small acreage livestock and horse owners.

A needs assessment of the target audience will identify barriers and incentives for encouraging the adoption of livestock BMPs. A train-the-trainer education program, primarily working with 4-H volunteers, will be developed to increase knowledge about livestock pollution risks, adapt and transfer livestock BMPs at a scale that is appropriate, and ultimately, increase the adoption of livestock BMPs by this target audience.

An existing small acreage livestock fact sheet and self-assessment series was developed in April 2005 as part of the Healthy Landscapes Education Program (2002 – 2006). The series addresses manure, livestock yard and pasture management and will be utilized and refined based on this needs assessment and program evaluation plan.



This small acreage farm lies on 1 acre within a residential area, North Kingstown, RI.



Livestock yards and pastures are often improperly managed and can be sources of concentrated animal waste, soil erosion and runoff to nearby water resources. (Photo Courtesy of University of New Hampshire Cooperative Extension.)



Manure storage area - runoff leaving the area is uncontrolled.

Methods & Outputs

- Establish and convene project steering committee consisting of project staff, state and federal agencies, non-profit organizations and livestock associations to provide stakeholder input and a framework for networking and information exchange.
- Conduct needs assessment of target audience through conducting three focus group meetings and a mail survey, primarily with Rhode Island 4-H livestock and horse club participants (adults and youth).
- Conduct education with first year URI animal science students using existing small acreage livestock fact sheet and self-assessment series to gauge its effectiveness and ease in readability and use.
- Develop, refine, and deliver a pilot "train-the-trainer" program for 4-H volunteers and other affiliated organizations based on needs assessment. At least 20 volunteers (10 teams) will receive the training and then conduct adoption-outreach education (minimum 20 hours per team) with the target audience.
- Develop and implement a formative evaluation plan (along with steering committee input) to refine program and track project objectives.
- Develop and conduct summative evaluation through post-evaluations and exit interviews to determine behavior changes among trained volunteers and target audience.
- Finalize adoption-outreach educational resources based on program evaluation and develop a 30-minute educational video.
- Disseminate program methods, results and resources to stakeholders, partners, the New England Water Program, Home*A*Syst network, 4-H Program network, and via the Extension network.



URI Animal Science students conduct a site assessment of URI Peckham Farm.



One of many 4-H Program events providing opportunities for outreach and education.



Rotational grazing being implemented at small acreage farm, North Kingstown, RI.

Desired Outcomes

- Target audience will gain increased awareness and knowledge of water quality risks associated with livestock activities.
- Steering Committee, trained volunteers and target audience will be aware of tools and resources to identify and address livestock pollution risks.
- Trained volunteers will gain increased knowledge and skills in topic area, public speaking and leadership.
- At least 20 volunteers are trained and equipped to deliver education and outreach about livestock BMPs.
- Target audience will be able to identify livestock pollution risks on their properties and consider these risks when making livestock management decisions.
- Target audience will adopt BMPs to address identified livestock pollution risks.
- Increased local and regional partnerships, including the New England Water Program's agricultural and sustainable landscaping focus areas.
- Increased protection of community water resources on an individual level.

Project Partners

URI Home*A*Syst Program

- Leads in research-based water quality and pollution reduction education programs.
- Develop self-assessment tools and educational resources.
- Conduct needs assessment and program evaluation.



URI Home*A*Syst Program staff educate animal and veterinary science students about soils, land use impacts to water quality and pollution prevention at URI Peckham Farm.

Rhode Island 4-H Program

- Access to target audience - over 500 members and 100 adult volunteers participate.
- Attend numerous events and have Public Presentations Program.
- Adults and youth widely connected to agricultural and rural networks.



Southern Rhode Island 4-H Fair

Presentations Program at Roger Williams Park Zoo

URI Dept. Fisheries, Animal and Veterinary Science

- Provides research and education on animal and veterinary science, and animal management and health.
- URI Peckham Farm - 14 acre farm serving as a demonstration site and teaching tool.



URI Peckham Farm serves as a demonstration site for conducting site assessment and learning about BMPs.

URI Dept. of Communication Studies

- Expertise in training volunteers to deliver effective presentations.
- Tailor educational materials to target audience based on needs assessment.

Visit our website
www.uri.edu/ce/healthylandscapes



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