

URI Small Acreage Livestock Education Program

Final Program Summary
September 2006 – August 2010

Situation

Throughout Rhode Island (RI) 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). Properties usually consist of small parcels in residential areas that are close to neighbors and water resources, especially private drinking water wells. Small acreage livestock owners often have different goals and resources compared to larger scale livestock operations. All these factors pose challenges for managing manure, livestock yards and pastures.



Adoption-Outreach Education Program

The University of Rhode Island Cooperative Extension (URI CE) Home*A*Syst and 4-H Programs, and the URI Departments of Fisheries, Animal and Veterinary Science and Communication Studies.

We have developed and conducted a train-the-trainer education program for small acreage livestock owners, working primarily with URI 4-H Program volunteers.

Accomplishments (September 2006 – August 2010)

Project Steering Committee

Convened Project Steering Committee (fall 2006) consisting of 21 members representing nine partner agencies and organizations, and URI faculty and staff.

- Conducted two Project Steering Committee meetings, January 2007 & October 2007.
- Developed and circulated three annual Program summaries (September 2007 - 2009) and two Program updates (December 2007, February 2009).
- Provided regular email updates on Program activities.
- Worked directly with six steering committee members to develop, evaluate and disseminate educational, outreach and needs assessment tools throughout the Project.

A list of Project Steering Committee members and meeting notes can be viewed on the website, www.uri.edu/ce/healthylandscapes/livestock/livestock_SC.htm. Program annual summaries and updates can be viewed on the website, www.uri.edu/ce/healthylandscapes/livestock/livestock_updates.htm.

Needs Assessment

Conducted a needs assessment (year 1) to identify the barriers and benefits to adoption of BMPs by the target audience, and to assist with development of educational and outreach tools and training methods.

- Conducted three focus groups and mail surveys (376 households) with the URI 4-H Program. Details about the needs assessment including the focus group questions, mail surveys, and a comprehensive summary report can be viewed on the website, www.uri.edu/ce/healthylandscapes/livestock/livestock_needs.htm.

Pilot fact sheet and self-assessment series and training methods with first year URI Animal Science Students (URI Peckham Farm)

- Conducted a site assessment of URI Peckham Farm using the fact sheet and self-assessment series with 50 first year URI Animal Science students, October 2006.
- Delivered a 1-hour slideshow on livestock pollution risks and BMPs and conducted a site assessment with 50 students, September 2007.
- Delivered 2-hour slideshow (4-H volunteer training program) on livestock pollution risks and BMPs and conducted a tour of existing and planned BMPs at URI Peckham Farm with 100 students, September 2008 (50) and November 2009 (50).

More information about the URI student education can be viewed on the Program website www.uri.edu/ce/healthylandscapes/livestock/livestock_education.htm.

Develop, refine and deliver a train-the-trainer education program for URI 4-H Program volunteers.

Educational and outreach tools developed and utilized:

- Color post card (7,000 printed).
- Two color poster displays on manure and livestock management; and pasture management and stream buffers.
- Updated the fact sheet (4) and self-assessment (2) series with new graphics, photos, and information.
- A PowerPoint slideshow about livestock pollution risks and BMPs for volunteer training program (two hours) and first year URI Animal Science students (one hour).
- Program website template and content pages, www.uri.edu/ce/healthylandscapes/livestock/index_livestock.html. Website development and maintenance has been on-going throughout the Project.
- 30 minute educational video, *Keeping Livestock: Protecting Water Resources and Health*.

Initial Outreach and Education Activities:

- Participated in a Southern New England Grazing Network pasture walk (Jamestown, RI) and distributed the fact sheet and self-assessment series, September 2006.
- Developed and conducted a workshop demonstrating the water cycle and land use impacts to water quality (*Build a Farm with Water Quality in Mind*) for the URI state 4-H Junior Conference.
- Conducted volunteer outreach with the URI 4-H Program using the post card, poster display, and fact sheet 1. Attended over 13 events (2007 – 2008) and conducted list serv announcements and direct outreach to former focus group participants.

Phase I, Train-the-Trainer (November 2008 – January 2009):

- 25, 4-H Program volunteers were recruited and pledged to participate in the volunteer training program.
- 15, 4-H volunteers (9 adults and 6 teens) participated in the training program.
- Indoor Session: 2-hour slideshow, groundwater model demonstration and resource binder.
- Field Session: 1.5-hour site assessment of URI Peckham Farm using URI fact sheet series.
- Assigned independent site assessments.
- Administered Program Evaluations.
- Follow-up workshop: 1.5 hour workshop to review and evaluate independent site assessments / URI fact sheet series and initiate Phase II.

- 67% of adult and youth trained volunteers (6 adults, 4 teens) completed independent site assessments on 7 private farms as of January 2008. 100% of the adults completed a detailed written evaluation of the fact sheet and self-assessment series.
- Effective Presentations Training: 1.5 hour workshop for trained volunteers, May 2009.

Phase II, Volunteer Education (February 2009 – August 2010):

- 4-H Volunteers have conducted over 50 hours of education and outreach activities.
- Direct educational programming conducted with nearly 50 4-H adults and youth, which included hands-on workshops using the groundwater model and “Build a Farm with Water Quality in Mind” activity.
- Attended 17 events throughout RI including 4-H fairs and clinics, livestock association annual meetings and events, and the RI Veterinary Technician Association Symposium.
- Outreach conducted through direct mailing and email / list serv to 35 4-H club leaders to share Program resources and events with 234 club member families.
- Outreach conducted with 83 Eastern States Exposition participants.
- Project staff participated in three educational workshops for RI livestock owners hosted by the Northern Rhode Island Conservation District (NRICD), April – June 2010. Conducted presentation on livestock BMPs and Program resources.

Newsletter articles: seven articles about the education Program and available resources were featured in the following newsletters:

- RI Sheep Cooperative (April 2007, February 2009 & October 2009)
- Northern RI Cooperative Extension Newsletter (spring 2007)
- Foster Home Journal (spring 2007 - free monthly publication mailed to approximately 11,500 rural households in northern, RI.)
- RI Raised Livestock Association (Fall 2009)

Other Program activities:

- Project staff attended the USDA NIFA (formerly CSREES) National Water Quality Program Annual Conferences (4), 2007 – 2010. Project staff attended each year with a poster (4) highlighting Program accomplishments and outcomes.
- Project staff participated on the Small Farms Team (2006 – 2007) with the National Livestock and Poultry Environmental Learning Center for development of eXtension website content, www.extension.org/pages/Manure_Management_on_Small_Farms. The URI Program website received recognition and commendation by this national team.

Other Related Projects

The Southern Rhode Island Conservation District in partnership with the RI DEM Division of Agriculture and the USDA Natural Resources Conservation Service (NRCS) conducted livestock inventories in two targeted watersheds during 2007. This included distribution of URI Program fact sheets. Project staff visited three small acreage farms with District staff to assist with needs assessment (April 2007).

The NRICD in partnership with the RI DEM Division of Agriculture and the USDA NRCS is conducting livestock inventories throughout RI. This includes the distribution of URI fact sheets and post cards and is expected to continue beyond the scope of this project.

- 833 livestock farm inventories throughout 14 RI towns have been conducted, September 2008 – May 2010. Additional livestock inventories and distribution of Program resources is expected to continue beginning September 2010.

- Project staff conducted training with NRICD staff on the use of the fact sheet and self-assessment series and other Program resources, July 2009.
- Beginning August 2009, NRICD staff will use program materials and assist interested livestock owners with site assessments.

Through projects funded by the USDA NRCS, Project staff participated in the planning, installation and evaluation of innovative livestock BMPs at URI Peckham Farm. Practices include the use of enhanced infiltration and geo-textiles for livestock heavy use areas (August 2008); and a forced aeration compost system (August 2010).

- A fact sheet on general manure composting (*Composting Manure On-Farm: Basics for Small Acreage Livestock Farms*) was developed through the NRCS project (July 2010) and is housed on the Program website, www.uri.edu/ce/healthylandscapes/livestock/livestock_publications.htm. The Program website will also be used to house a demonstration site page and fact sheet about the URI Peckham Farm composting system.
- Project staff participated in a tour of these BMPs, conducted for NRCS staff, July 2010. Distributed Healthy Landscapes Program materials including the updated fact sheet and self-assessment series and post card. Discussed use of URI Peckham Farm to conduct education and training with the URI 4-H Program and Animal and Veterinary Science students.

Program Evaluation

- Conducted a needs assessment (year 1) to identify the barriers and benefits to adoption of BMPs by the target audience and to assist with development of educational and outreach tools and training methods. Conducted three focus groups and mail surveys (376 households) with the URI 4-H Program. Details about the needs assessment including the focus group questions, mail surveys, and a comprehensive summary report can be viewed on the website, www.uri.edu/ce/healthylandscapes/livestock/livestock_needs.htm.
- A formative evaluation plan was developed and implemented at the start of the volunteer training program and throughout the remainder of the Project to track project objectives and refine the program as needed. Formative program evaluation tools can be viewed and downloaded from the Program website, www.uri.edu/ce/healthylandscapes/livestock/livestock_voeducation.htm.
 - A study of the Program website usage was conducted using Google Analytics. The study was conducted for year 3 of the project (September 1, 2008 – August 26, 2009) which consisted of core educational programming and outreach to the target audience.
 - The Program website was assigned to MBA graduate students (MBA 576, Business Communication and the Internet) to provide an evaluation in terms of overall design, presentation, ease in navigation and understanding of the information presented, and appeal to target audiences (July 2008 and July 2009). Overall, the website received positive reviews for content and appeal with suggestions for improving formatting and layout of certain pages. Many of the comments from July 2008 have been incorporated.

- ◆ A summative program evaluation was conducted to track and summarize changes in the target audiences' knowledge, attitudes, skills and behavior. Three on-line surveys were developed and conducted from March – May 2010. One survey was developed for each of the following: Project Steering Committee; Trained 4-H Program Volunteers; and Program Participants. A comprehensive summary report was developed in June 2010 and can be viewed and downloaded (along with the surveys) from the Program website, www.uri.edu/ce/healthylandscapes/livestock/livestock_voeducation.htm.

Program Impacts

Summative Evaluation - Project Steering Committee (10 individuals, 5 responded):

- ◆ 100% gained new knowledge about livestock BMPs that reduce pollution risks.
- ◆ 60% gained new knowledge about pollution risks associated with livestock.
- ◆ 60% gained at least one new partnership or connection with another group.
- ◆ 100% shared Program information with other colleagues.
- ◆ 80% shared Program information with livestock owners.
- ◆ 80% used one or more Program resources to enhance their programs.
- ◆ 100% have used the fact sheet series.
- ◆ 80% have used the Program website.
- ◆ 60% have adapted the fact sheet series.

Summative Evaluation - Trained 4-H Program volunteers (9 adults and 6 teens, 3 adults and 1 teen responded): The biggest challenge was limited time to devote to this Program, however:

- ◆ 100% of respondents indicated a strong interest in the topic and Program, and agreed that the training workshop, methods and resources were adequate.
- ◆ 75% of respondents indicated an interest in continuing to volunteer for this Program in the future.
- ◆ 100% of respondents gained new knowledge and identified at least one new practice to adopt.
- ◆ 75% of respondents adopted at least one new practice.

URI fact sheet and self-assessment series evaluation summary - of the adult trained volunteers (6, 67%) that completed an independent site assessment and evaluation - 100% agree that:

- ◆ The series is easy to read, understand and complete.
- ◆ The series is effective in identifying pollution risks.
- ◆ The series provides appropriate solutions (BMPs) for small acreage livestock owners.
- ◆ They would recommend the series to other livestock owners in RI.
- ◆ Livestock owners in RI would adopt BMPs if they were aware of and used the series.

Formative evaluation summary - trained 4-H volunteers and other program participants immediately following an educational workshop (fall 2008 – spring 2009):

- ◆ 87% of trained volunteers (100% adults) gained knowledge about hydrology, the water cycle, and the interaction between watersheds and aquifers.
- ◆ 100% of trained volunteers and 89% of program participants (100% adults) gained knowledge about pollution & health risks associated with livestock.
- ◆ 93% of trained volunteers (100% adults) and 89% of program participants (100% adults) are capable of identifying pollution & health risks on their property.
- ◆ 93% of trained volunteers (100% adults) and 89% of program participants (100% adults) are capable of identifying BMPs.
- ◆ 100% of trained volunteers and program participants are considering the adoption of at least one BMP.

A study of the Program website usage was conducted using Google Analytics. The study was conducted for year 3 of the project (September 1, 2008 – August 26, 2009) which consisted of core educational programming and outreach to small acreage livestock owners in RI, particularly through the URI 4-H Program.

- The top four most visited pages include: home page, manure composting, manure recycling, and fact sheet page, respectively.
- A high percentage of visits to the home page (54%) and fact sheet page (34%) occurred from RI compared to the other most popular pages on manure composting and recycling. About 25% of RI visits to the home page and fact sheet page occurred through direct connection (typing in website address). Spikes in this activity occurred during key periods of public outreach.
- Overall, the third highest percentage of traffic to the home page (11%) comes from the National / Regional Water Quality Program (www.usawaterquality.org), indicating that Extension Colleagues from throughout the region and country are aware and connecting with Program resources. This is supported by URI CE's participation in regional and national water quality programs on the topic of Small Farms over the past 3 years.

Program resources and methods have been effective in increasing knowledge and encouraging the adoption of livestock BMPs among small acreage livestock owners in RI. Educational workshops and the Program fact sheet series have been the most effective in accomplishing these outcomes. Partnering agencies and organizations have strengthened programs through an increase in knowledge and connections and through use of Program resources.



4-H volunteers conduct a site assessment at URI Peckham Farm using the URI fact sheet and self-assessment series. Volunteer Training Program, November 2008.



Trained 4-H volunteers conduct outreach and education through attending 4-H clinics, fairs, and livestock association events.