Conservation Innovation Grants
Semiannual Progress Report Template

Grantee Name: Watershed Agricultural Council of the NYC Watersheds, Inc.

Project Title: Demonstration of conservation & producer-based benefits of a bedded pack management system on a small intensive grazing dairy farm

Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: August 15, 2006 – February 15, 2007

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:

The elements of work completed in this reporting period include a final planning and implementation of the proposed project, completion of project design and construction, farm labor and economic analyses and outreach.

Describe significant results, accomplishments, and lessons learned.

The most significant result of the prior project period is the construction of the bedded pack manure storage structure. Construction was completed and payment was made in December 2006. A large accomplishment within the implementation of the structure was effective storm water drainage around the structure. Proper clean water exclusion is important for the long term success of this system. Additionally, approach areas surrounding the facility were secured to stabilize soils and minimize the impact of traffic from animals and equipment. Use of locust and tamarack (a local forest resource) provided the largest lesson learned in the construction phase. This material was more difficult to procure and of a strength greater than expected. These materials were required due to the intention of the producer to transition to an organic operation.

The producer moved his herd into the structure upon the completion of construction in December. Dairy Farm Business Summaries (DFBS) have been completed for the years 2005 and 2006 with another planned in 2007. Baseline conditions on the farm have been sufficiently collected through these activities. Additional determinations will be completed this fall once the producer was using the structure. The local Cornell Cooperative Extension of Delaware County (CCEDC) Agricultural Extension Leader has

developed in conjunction with Jason Karszes, Cornell University and the producer, daily labor analysis work sheets. These sheets focus on the time used in general farm tasks as well as those related specifically to management of the bedded pack facility. Local CCE staff collaborated with staff from the Cornell Pro-Dairy program in order to fully identify the labor functions of the producer so that they will be appropriately monitored. A large accomplishment related to farm management is the regulation of temperature. Through the use of passive ventilation through sidewalls and windows, the environment within the structure has remained comfortable for the animals. Age groups are kept separated with the use of fencing and are easily rotated within the facility. One significant lesson learned regarding the producer experience is that, despite additional costs, straw is a better material than hay to use in building up the pack.

Compare actual accomplishments to the project goals in your proposal:

Animal welfare has been improved to a greater extent than expected. Calves are growing faster and larger than anticipated. The producer feels that the calves from this year will be the largest he has produced. General conditions are good including ventilation, area per animal and temperature. The animals are cleaner than they were prior to implementation. All of these conditions have continued the trend of good production numbers at this farm.

Preliminary qualitative analysis shows that the producer is using more bedding than anticipated. Based on 4'x 4' processed straw bales, the producer is using approximately half a bale more than he has with previous management practices. A large amount straw bedding was imported from Canada at a low price. From numerous visits to the farm, it is clear that he is taking good care of the facility.

With regard to construction work, scheduling was an unexpected issue. Movement of animals on this grazing facility was a significant challenge. Since the location of the original bedded pack was no longer available due to construction and the farm system is a rotational grazing system, the producer has had to turn his animals out to pasture when there was no grass was growing. The animals were punching up a valuable pasture. A unique change in our goals was brought about by flooding though out our region in June, 2006. Repairs needed because of this event kept regional contractors busy for the entire construction season.

Describe the work that you anticipate completing in the next six month period:

The producer will clean out the pack that is in the manure storage structure once his herd leaves the pack for the grazing season. As a team, the most effective process to compost the pack will be determined. Many variables must be evaluated: What is the final height of the pack at the end of the winter? When is the best time in the grazing season to clean out the pack? Should the producer allow the pack to remain in the facility so that it partially composts or should the pack be moved to windrows once the animals leave for pasture? How will the producer remove the pack from the facility? Should he use his

own equipment and labor time or hire an independent excavation contractor? Where is the best location to place the pack material once he begins to compost it? How much of the producer's time will this process take? Is there a way to perform this task more efficiently in the coming years? It is certain that additional questions will arise in the coming six months.
An additional DFBS will be completed for 2007. Values related to labor and cost will continue to be collected. Over the term of the research task, the DFBS on this farm will be compared to other similar farms in the region. Temperature measurements were assed once to determine the different temperatures at several depths of the pack. There is a potential for expansion of the herd.
An additional tour is planned for the fall to share the conclusion of the initial year of use. Associated written outreach materials will be produced over the course of the project.

The landowner will continue to be involved with the pasture group organized by WAC. There is a hope to more fully involve members of the pasture group in the progression of the project. The producer has recently attended a calf assess workshop through WAC and CCEDC and he and his family intend more fully integrate the tools from this session in to their operation.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

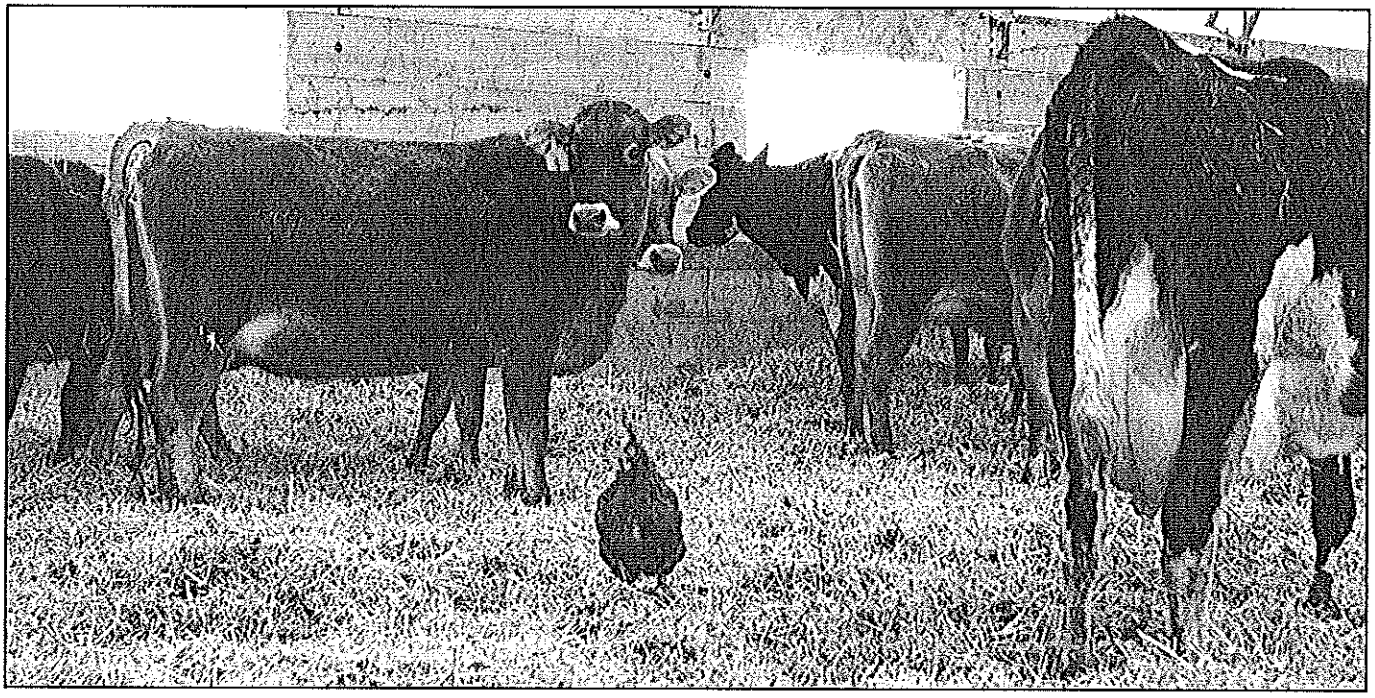
1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $224, 753.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $0.00
   Cumulative: $0.00
   Payment made to producer:
   This period: $0.00
   Cumulative: $0.00

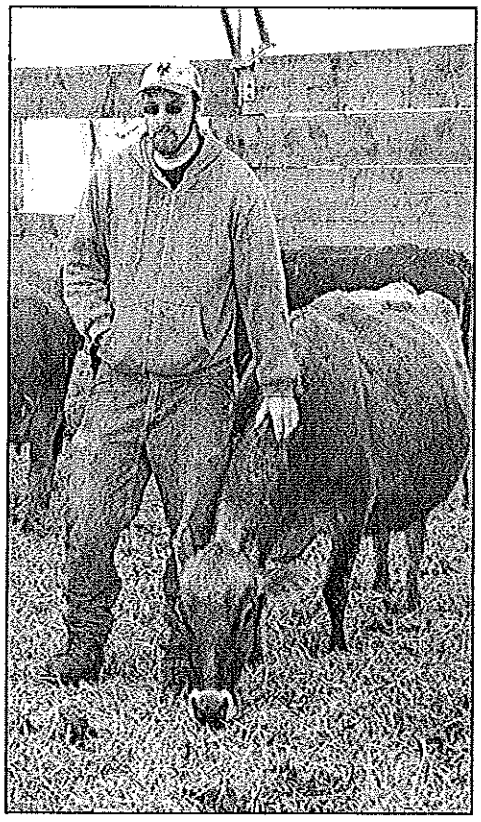
3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural,**

vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.

Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned implementation meets HEL/WC, nutrient management planning and the mission of the WAC.



Out With the New and In With the Old



Jake Fairbairn

At Lazy Crazy Acres Farm, operator and manager Jake Fairbairn is enjoying the advantages of some old technology. The idea of using the covered bedded pack system he has in place today was completely foreign to him just a few years ago.

Fairbairn's grandfather bought the farm in 1931 and supplemented his dairy business by growing cauliflower, until he decided to quit milking in 1977. In 2004, Fairbairn decided he wanted to try milking cows for a living.

He quickly found, however, that the way Lazy Crazy Acres Farm is situated on the land contributed to nutrient runoff problems and a very sloppy barnyard. He talked to Dan Flaherty with the New York City Watershed Agricultural Council (WAC) about possible solutions.

"While developing Jake's Whole Farm Plan, I had to figure out a way to cover the area, which would help with the barnyard, but we also had to deal with the manure, because you can't spread manure here most of the winter," Flaherty said. "There is a steep hill above us, and you can't get up there with a spreader, and there is a road ditch with a stream on the other side of the road. I wondered where we could put a covered barnyard and manure storage, since there wasn't a whole lot of room, and we had topography working against us."

"Dan came up with the idea of a coverall and bedded back, but I thought it wouldn't work," Fairbairn said. "However, we went to look at a few places in Vermont who were doing it, and it was working there."

Bedded pack barns provide cows with a large bedded pen for resting rather than individual stalls. The practice is common in Europe, but with the advent of stanchions and tie-stall barns it began to go out of style in the United States many years ago.

Bedded pack refers to the mixture of bedding, usually wood shavings or kiln-dried sawdust and straw and hay would be common bedding materials. A properly managed bedded pack provides a healthy, comfortable surface on which

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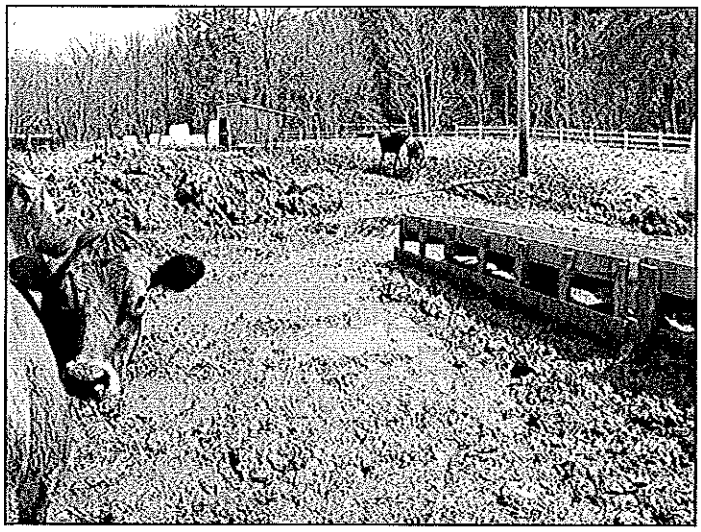
cows may lie.

Bedded pack housing allows a cow free access between resting, feeding, and watering spaces. To manage cow cleanliness, producers can adjust either the group size or the quantity of bedding used per day, but as the bedded area per cow decreases, the amount of bedding and the frequency of adding bedding required to keep the cows clean increases.



This picture shows the area where the covered bedded pack was installed at Lazy Crazy Acres Farm to help alleviate nutrient runoff problems and cure the sloppiness of the barnyard.

Bedded-pack barns have lower capital costs compared to a combination of freestall barns and liquid manure storage structures because bedded-pack barns require less concrete and equipment. Furthermore, there is less investment in manure storage structures because the bedded pack provides storage.

"The challenge we had was since the farm was in the New York City Watershed there were cost guidelines in place and a limit on what can be spent on a project," Flaherty said. "Luckily, there was a Conservation Innovation Grant that came from NRCS that helped pay for the conservation practice."

Challey Comer, an Engineering Specialist with WAC set pen to paper to apply for the grant.

"CIG is part of NRCS' Environmental Quality Incentives Program and was part of the Farm Bill," said Comer. "Last year, there was about $20 million dollars awarded with a 50 percent cost share. We luckily had the match, thanks to the New York City Department of Environmental Protection, and there were about 70 projects across the country funded last year. Every year there are different areas of focus for the grants, and last year two were grazing and small dairies, so everything came together for the project."

The CIG projects have to be one to three years in length and use regular practices in a new way, like using a bedded back for manure storage. Another requirement is conducting outreach sessions, like a bedded pack tour that took place at Lazy Crazy Acres in early March, to help inform other people about various conservation practices.

Fairbairn was approved for the grant, and the pack was installed in the middle of December of 2006.

"Here we are now, after one full winter using the coverall, and I'm pretty happy with it," he said.

According to Flaherty, numerous people from many agencies worked on the project.

"It was a cooperative effort to get the funding and develop the whole farm plan," he said. "Thanks to WAC and the NRCS' CIG for funding this project, so it could be built."

The Lazy Crazy Acres bedded pack is one of two bedded pack systems in New York State implemented through CIG. The other is a larger dairy located in Western New York.

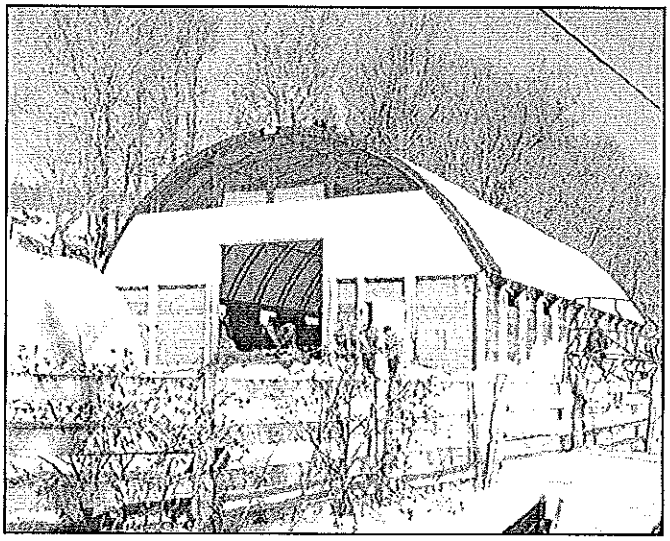
"This system is much better for a grazing farm, because if you had to have the animals in the bedded pack area 12 months of the year, it would fill up too much," Flaherty said. "But, six or seven months of the year, cows can be on the hill pasturing, and five months they can be bedded down here and it works out well."

Fairbairn's bedded pack is actually three conservation practices in one, because it acts as a manure storage area, a feeding area, and a barnyard.

Bedded packs must be properly managed to maintain a healthy and comfortable cow environment.

"Bedded packs should be completely cleaned out during the grazing season and applied to cropland as part of a manure management plan," Flaherty said. "All or some of the bedded pack can also be removed in the spring before fields are planted."

"The system is efficient and cost effective," Fairbairn said. "I will spread the pack once it has self composted. I'm a much happier person compared to last year."



Fairbairn's animals stay in this covered bedded pack environment during the winter but spend summer months grazing on the hill behind.

SUMMER 2006

SMALL FARM QUARTERLY

Good Living and Good Farming ... Connecting People, Land, and Communities

Feature Articles

CORNELL Small Farms Program

Photo by Jason Houston

STEWARDSHIP AND NATURE

Bedded Pack Barn at Lazy Crazy Acres

The covered bedded pack system may be emerging as a Best Management Practice for small dairies, providing environmental controls, economic benefits in the form of production efficiencies, the social benefit of avoiding liquid manure storage odors, and enhanced carbon cycling and sequestration.

By John Thurgood

Outside the small Catskill mountain community of Arkville, up a long and picturesque road, you will find Jake Fairbairn's Lazy Crazy Acres. The farm nestles in a narrow valley with steep pastures, meadows on one side and woodland on the other. The well-cared-for main dairy barn harkens back to an earlier time and is unique in that it is narrower than most, likely built to fit better against the hillside.

GETTING STARTED

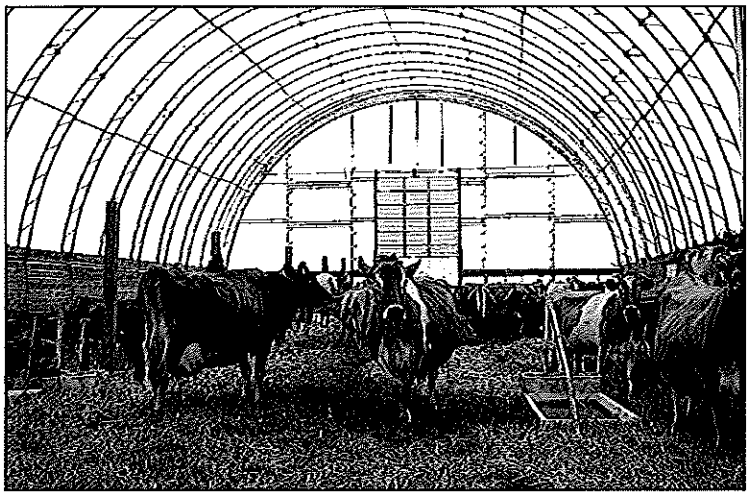
After four years of liberal arts at Plattsburgh State, Jake learned of The School of Beginning Dairy Farmers offered by the University of Wisconsin. From November 2002 to March 2003, he participated in their beginning dairy farmer course, which focuses on general agriculture with an emphasis on grazing.

One expectation of the program was that participants serve internships at the end of the academic sessions. To that end, Jake interned at Burt and Trish Paris' farm in Belville, Wisconsin. The Parises manage 80 cows on a bedded pack and milk with a ten-unit swing parlor; the cows are fed outside.

His next stay was at the Alfred and Sue Krusenbaum farm in East Troy, Wisconsin, where 91 cows are managed on a bedded pack with a feed alley; milking is done with a swing-16 parlor. The Krusenbaums produce their milk organically and use biodynamic practices. Reflecting on these experiences Jake said, "I learned more over the summer than I did during the winter."

In the summer of 2004 Jake purchased 16 cows, grazing them on the 70 acres of pastureland that lies just above the farmstead. The pastures were fairly run down at the beginning, having been relatively idle. Since the land was not in rotation with annual crops, the organic matter levels and soil health was strong. Nutrient levels on the pastures were medium to high and overall pH levels were good. The plants, however, were not vigorous, and there were too many weeds from a lack of grazing. Through well-managed rotational grazing, the pastures have started to come back with a vengeance.

Jake's herd now consists of 40 crossbred cows. He doesn't hesitate to tell you that he doesn't like to do any unnecessary chores; labor efficiency is always on his mind. And at 6' 6" in height, Jake knew that bending under the cows wouldn't work. He decided that building a swing parlor was his first priority.



Bedded Pack Barn at Butterworks Farm. Photographer: Dan Flaherty

Using what he had learned about swing parlors, he designed a system to be installed in the tie-stall barn. You might wonder where the cows would spend the winter...Jake felt comfortable with out-wintering the cows on a bedded pack of straw. As to the impact of an outdoor pack on udder health, Jake relates, "I had the lowest somatic cell count for the county (Delaware 2005)."

ENVIRONMENTAL CONCERNS

Move the clock forward to the winter of 2005 when Jake was working with his whole farm planner Dan Flaherty, Small Farm Program Manager for the Watershed Agricultural Council. Using the Agricultural Environmental Management (AEM) process, Dan and Jake identified the farm's environmental issues and developed a whole farm environmental plan as part of the NYC Watershed Agricultural Program.

Out-wintering the cows was working well from a cattle management perspective, but runoff from the barnyard area adjacent to the bedded pack and from around the feeding area was identified as an issue by the AEM process. Lazy Crazy Acres also had the challenge of not having enough land for winter manure spreading that had a low risk of runoff.

The traditional approach to these issues would be to construct a barnyard water management system, a heavy use area for cattle feeding, filter area and a liquid manure storage. These practices would be very expensive, and Jake did not want liquid manure due to odor and other issues.

THE BEDDED PACK SOLUTION

Dan Flaherty had heard of farms in northern Vermont that had constructed covered bedded pack barns to address manure storage. Dan brought up the idea to Jake. At first Jake thought, "It won't work...too much manure in the bedding. It will turn into a mess." After the trip, both Dan and Jake were sold on the idea.

One of the farms they visited was Butterworks Farm, owned and managed by Jack and Anne Lazor. Butterworks Farm manages 45 Jersey cows organically; produces organic corn, oats, barley, soybeans, and alfalfa; and processes its milk into yogurt. Dan and Jake were impressed with how clean and content the cows were on the bedded pack -- let's face it, they were down-right happy!

In addition to housing the cattle, Jack believes the pack is a major benefit to his farm system as a valuable source of carbon to be returned to the soil. Jack is concerned that we have "decarbonized agriculture" in America. The added carbon is expected to benefit the soil biological community, increase soil organic matter and enhance soil health. Increased soil organic matter will also carry the benefit of sequestering carbon from the atmosphere, where it otherwise would contribute to greenhouse gases.

With the covered bedded pack system, the bedding is not stirred as with composting bedded pack barns that were discussed in Frans Vokey's article "Composting Bedded Pack Barns Get Attention," in the Small Farm Quarterly Spring edition. Bedding, in the form of straw or coarse hay, is added daily. Jake has had good success with processed, large, square-baled straw, which spreads well with his box spreader. Wood shavings and sawdust are not readily available in the Catskills, and with renewed interest in alternative fuels, access to these products is likely to get worse. It is questionable whether this processed straw can be stirred for composting; Jake is not interested in adding another task to his chores so, at this point, composting is not an option.

The bedded pack structure will be 50' x 100' with a hoop and fabric roof and 10-foot sidewalls of tamarack. Round bale feeders will be rotated daily to avoid a concentrated build up of manure. A feed alley would create liquid manure requiring storage; rotating the feed area eliminates this issue. The waterers will be placed on cinder blocks so levels of block can be added to elevate the waterers as the pack builds up.

ADVANTAGES OF BEDDED PACK

The advantages of the bedded pack system are expected to be numerous. It is estimated to be more cost effective than construction of a traditional concrete barnyard, gravel or concrete feeding area and manure storage, especially if it is a non-earthen storage structure. While providing environmental benefits, the system can offer more efficient housing and milking than a tie-stall barn.

The fact that Jake has his animals on pasture for six or more months during the year will significantly reduce the bedding requirement and cut labor costs. Coupled with Jake's swing parlor and grazing, the farm has the promise of being very labor efficient.

Jake has been designing his covered bedded pack system in cooperation with the Watershed Agricultural Program; construction will begin this summer. He is confident that udder health will remain strong with the covered bedded pack, "I think having the pack covered will make it easier because it will be keeping all that moisture out." As for having the lowest somatic cell count in the county, Jake said, "If I could do that again I would be pretty happy."

There are some unanswered questions about the system such as dry matter intake using round bale feeders, bedding cost and alternatives (will mature reed canary grass work?), labor required for pack management and the total farm system, mastitis, and unanticipated effects. In future issues of the Small Farm Quarterly we will keep you informed of Jake's experiences with the covered bedded pack system, and may be able to answer some of these questions.

For more information on bedded pack barns, you can call me, John Thurgood, or Dan Flaherty at 1-607-865-7090. To talk with Jake Fairbairn about his system, please call 845-586-1255. More information on Butterworks Farm can be found at www.butterworksfarm.com. The farm's bedded pack system was also featured in the May 2006 edition of Northeast Dairy Business.

John Thurgood is a senior whole farm planner for Cornell Cooperative Extension in Delaware County as part of the NYC Watershed Agricultural Program. The Watershed Agricultural Program works with farmers in the Catskills to develop and implement whole farm plans to protect the water supply for the nine million residents in and around New York City while enhancing farm viability. Information at www.nycwatershed.org.

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Contact Information: Email: blatourette@nycwatershed.org,
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Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: February 16, 2007 - August 15, 2007

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:

The elements of work completed in this reporting period include the observation, education and assistance to the producer for use, operation and maintenance of the project as well as working with the producer on record keeping of farm labor and economic analyses.

Describe significant results, accomplishments, and lessons learned.

During this period, the producer settled into the new management system. The most significant result of the prior project period was lesson learned from the management of this system. The producer gained a full understanding of the amount of straw bedding that was used to properly maintain a clean and dry herd, time for proper management and the difficulties of elevating to the waterers to the new heights of the bedded pack. All other components of the entire project seem to be functioning very well. The installed drainage systems and the roofed area perform as intended. Minor excavation, shaping and grading, and reseeding and mulching were completed in April.

A tour of the facility was conducted on March 9, 2007. There were 43 attendees, 23 of whom were farmers from a four county area. Agencies including USDA-NRCS, The United States Environmental Protection Agency (EPA), numerous Soil and Water Conservation Districts, CCE and the Watershed Agricultural Council (WAC) were represented by 21 agricultural professionals. Topics included introductions, history of the farm, background on the whole farm plan, description and acknowledgement of the funders for this project: NRCS CIG and the Department of Environmental Protection,

implementation, and farm labor research. There was a large amount of informal discussion between producers and professional following the presentation. All agreed that the animals were visibly content and very comfortable in the structure.

The statewide Public Affairs Specialist for USDA-NRCS of New York, Kristen Skopek, attended and plans to publish a cover story in the coming monthly New York State Newsletter. A presentation to the WAC Large Farm Committee of regional Watershed Agricultural Program (WAP) farmers was completed on March 12th. A summary of the tour will be included in a coming WAC newsletter sent to over 500 participants. An update on the project will appear in the Spring Edition of Cornell Small Farms Quarterly. A follow-up tour will be conducted to update the community on the facility after a full winter of use.

The fields started becoming available for grazing in April and the milking herd was allowed to linger in the facility for water and dry hay until May 15 when they were totally excluded from and rerouted around the facility.
The calves and young stock continued to be housed in a small penned portion of the facility. Due to the enhancement of the producers grazing system and crop harvest, the covered bedded pack was not cleaned during this report period. Program staff worked with Jake to investigate the most cost effective method in empting the facility. Temperatures were also taken and recorded of the static pack within the structure.

The local Cornell Cooperative Extension of Delaware County (CCEDC) Agricultural Extension Leader continued to work with the producer to collect daily labor analysis sheets and began a preliminary study for daily farm labor spent in comparison to the previous barn situation. She also conducted the farm business economic analysis as baseline that covered the first winter in the facility. A comparison farm was selected and performed a baseline time study of that farm was completed in order to make an evaluation of a conventional grazing dairy of the same size and similar practices as the project farm. These sheets focus on the time used in general farm tasks as well as those related specifically to management of the bedded pack facility. Local CCE staff continued to collaborate with staff from the Cornell Pro-Dairy program in order to fully assess labor and economic implications of the system.

Two articles were written and submitted to the Small Farms Quarterly about the progress and status of this CIG project. See attached.

In May, we submitted an abstract to the Soil and Water Conservation Society (SWCS) and were selected to present and display a poster presentation of the "Demonstration of Conservation and Producer Benefits of a Bedded Pack Management System" at the 2007 Conservation Innovation Grants Showcase, part of the Soil and Water Conservation Society of North America Annual Conference in Tampa, Florida. At this event, we were awarded first place at the poster presentation reception for our project presentation including content, flow, readability, organization, overall appearance and the posters ability to inform the public of the described CIG project. Pictured below are Brian LaTourette and John Thurgood receiving the NRCS Conservation Innovation Grant

Poster Award (Pewter Eagle) from NRCS Chief Arien Lancaster, Tom Christensen, Deputy Chief of Programs and Larry Clark, Deputy Chief for Science and Technology.

Compare actual accomplishments to the project goals in your proposal:

Throughout this period, animal welfare continues to show improvement. Calves continue to grow faster and larger than anticipated. Ventilation and housing temperature for the youngstock have been notably good. All of these conditions have continued the trend of low youngstock illness and mortality and good production numbers at this farm.

A preliminary qualitative analysis has shown that the producer is using more bedding than anticipated. Based on 4'x 4' processed straw bales, the producer is using approximately half a bale more than he has with previous management practices. Luckily, a large amount straw bedding was imported from Canada at a cost effective

price. From visits to the farm, it is clear that the producer is taking good care of the facility and the new management needed.

Describe the work that you anticipate completing in the next six month period:

The producer will clean out the manure pack that is in the manure storage structure and transport via spreader to a proposed /approved composting area. Heights and temperatures will be monitored to evaluate composting activity within the structure. Time and equipment used will be recorded for the empting process.
An additional DFBS will be completed for 2007. Complete values related to labor and cost will continue to be collected. Over the term of the research task, the DFBS on this farm will be compared to other similar farms in the region and with the comparison farm. An additional tour is planned for the fall to share the conclusion of the initial year of use. Associated written outreach materials will be produced over the course of the project.

The landowner will continue to be involved with the pasture group organized by WAC. There is a hope to more fully involve members of the pasture group in the progression of the project.

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   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $10,768.40
   Cumulative: $10,768.40
   Payment made to producer:
   This period: $0.00
   Cumulative: $0.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**

   Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned implementation meets HEL/WC, nutrient management planning and the mission of the WAC.

1

SUMMER 2007

NEW FARM QUARTERLY

Good Living and Good Farming ... Connecting People, Land, and Communities

CORNELL Small Farms Program

Photo by Half Pint Farm

Feature Articles

Supplement to Country Folks

Cows & Crops

The Bedded Pack Barn

An old idea with brand new importance.

by John Thurgood

So, where do the past and the future of agriculture meet? In some respects it is in the area of farm environmental management. It seems that many of the practices associated with modern agriculture and the "green revolution" have led to widespread environmental degradation in the form of nutrient runoff and soil erosion. To resolve some of these issues many farmers are reinventing "old-time" systems such as grass-based farming and composting.

Here in the Catskills, dairy farmer Jake Fairbairn has been working with staff of the Watershed Agricultural Program to resolve some environmental challenges at his farm, Lazy Crazy Acres. The solution Jake has developed is surprisingly old fashioned.

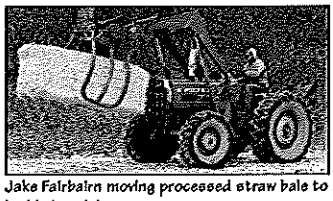
PROBLEM: NUTRIENT RUNOFF

The problems were primarily caused by housing and feeding dairy cows outdoors as well as farm fields that are inaccessible for winter manure spreading. As Jake's farm has no practical filter area for treating barnyard effluent, the "modern" alternative would be a covered barnyard. The "modern" solution for manure storage would be an above ground storage tank.

The problem with this approach was a lack of space on the farmstead for these systems and Jake's aversion to liquid manure. The nutrients in liquid manure are relatively soluble and are prone to leaching through the soil profile. Odors would also likely aggravate Jake's neighbors and seasonal visitors to the Catskills.

SOLUTION: BEDDED PACK

After extensive exploration (described in the July 10, 2006 Small Farm Quarterly, "Bedded Pack Barn at Lazy Crazy Acres") Jake decided to implement an "old time" bedded-pack system that would house cows during six months of the year, serve as the winter feeding area, and store manure in the form of a pack. The project is funded by a USDA Conservation Innovation Grant and the Watershed Agricultural Council.



Jake Fairbairn moving processed straw bale to bedded pack barn.

Photo by John Thurgood

In the Summer 2006 issue of the SFQ, we promised to give you an update on the system's performance during the first winter. First let's review the basics of the project. The system consists of a 50' x 100' fabric-covered hoop structure with 8"x 8" locust posts and 3" x 12" rough-cut tamarack sidewalls that are 10' high. There are six 2' x 6' windows per side. Surface drainage takes water around and away from the building. The floor consists of one foot of 2" minus crushed gravel over geotextile fabric, then 6 inches of wood chips covered by straw bedding.

The bedded-pack system at Lazy Crazy Acres was not intended to be a composting barn with twice daily stirring like the barns you may have read about in the mid-west. Jake did not want the extra chore of stirring and realized that meant that he would have to use more bedding. The system has a rotated feeding area using large round bales to avoid having a concrete feed alley which would require liquid manure storage.

EVALUATION: THUMBS UP

So how did it all work out? This past winter Jake had his Jersey and mixed-breed cattle on the bedded pack: 35 cows, 20 bred and open heifers, 11 yearlings and 2 calves (Jake likes his cows to freshen on pasture). Jake and his fiancée Karen Caskey are really positive about the covered, bedded-pack system.

Jake said, "My cows are in better condition and my yearlings have done better than ever ... they really look great. The cows were happier and so was I." Jake's parents, John a veterinarian, and Sally, help out on the farm and are also very happy with the system.

Jake relates that the only drawback of the new system was that since the cows spent the winter on a soft, bedded pack, their hooves had to be trimmed this spring. The excellent udder health and milk quality experienced with the previous system has continued. The somatic cell count before and after the bedded pack barn has averaged 150,000.

The cows were supposed to enter the facility on December 15, 2006. That date was delayed while the contractor completed construction. Next year, Jake will likely have the cows in the barns as the weather breaks to winter, probably in November or early December.

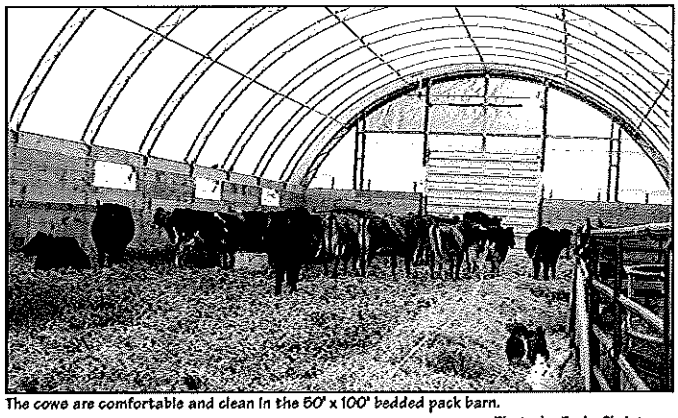
MANAGING THE SYSTEM

Jake adds bedding to the barn every other day which takes 45 minutes to an hour. The alternate day he adds one or two round bales of hay or haylage. They have found that the polypropylene pipe-type, round bale feeders stand up to the cattle better than the lighter gauge steel feeders they used before. Jake milks his 35 cows in a 5 unit swing parlor and is usually done with milking in about an hour.

Adjusting the height of the barn waterers as the pack built up was accomplished by placing the waterers on 6' x 6" wood cribbing. The challenge was the need for the pack to hold the waterers in place, which led Jake to digging the waterers out with a pitch fork as the pack built up. We will welcome time-tested ideas on the construction of adjustable height waterers. Remember, they must remain insulated underneath to prevent freezing.

Jake will install hinged panels to cover about half of the windows, especially where calves are housed. Jake closed the overhead doors on each side of the barn nearly every night this winter, reopening them during the day except when there was wind, rain, or sub-zero temperatures. With the doors closed, ventilation consisted of air moving through the shade cloth end walls and windows. Jake relates that, "Ventilation was excellent, nearly as good as outdoors." Some farms have experienced a build-up of ice on the end wall shade cloth, so Jake will monitor this, although it was not a problem last winter.

Since Jake's herd has not reached the barn's design capacity of fifty cows, he used one-third of the barn to house heifers and youngstock. Jake used metal panels to create pens for the heifers; a line of electric fence separated the cow and heifer areas. As the pack built up, animals could reach to the open windows, so Jake ran electric fence in front of them. The cows had about two-thirds of the barn's area this winter. In the future, the heifers will be housed in his parents' barn.



The cows are comfortable and clean in the 50' x 100' bedded pack barn.

Photo by Paula Christman

COSTS AND BENEFITS

The litmus test of bedded-pack system viability seems to revolve around one issue....bedding cost. Jake used 66 tons of processed straw from Canada at $150/ton for bedding this winter. That calculates to nearly $10,000 or roughly $185 per animal unit for about 6 months. Looking at these bedding cost, Jake plans to house the bred and open heifers somewhere else next winter.

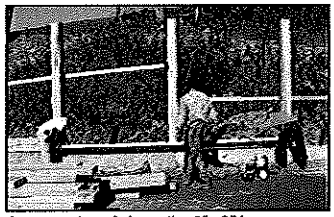
Jake Fairbairn and Karen Caskey enjoy time away from the farm at "Down Off the Farm Day," an event sponsored by the Watershed Agricultural Program in appreciation of participating farmers.

Photo by John Thurgood

So that's the cost. What about the benefits? Keep in mind that the bedded-pack housing in tandem with a milking parlor is a system that significantly reduces labor. There are also the anticipated benefits of enhanced animal health, the benefit of the carbon and other nutrients in the pack (part will be composted) to cropland and pasture, odor management, and happy cows and farm family. A detailed analysis is in process and will be published as part of a Conservation Innovation Grant.

AN OPTION TO CONSIDER

Jake recommends that small farmers needing to implement water quality practices around the farmstead strongly consider the bedded-pack system versus the traditional practices of liquid manure storage, concrete barnyard and feeding area. "Your cows will do better and the manure coming out of the pack is in a much more stable form than liquid manure," he says.



Construction of the walls, 8"x 8" locust posts and 3" x 12" rough-cut tamarack sidewalls that are 10' high.

Photograph by Paula Christman

If designed properly, the bedded pack system can meet NRCS standards and specifications for barnyard water management and manure storage. Similar systems in Vermont have received cost share assistance through the USDA EQUIP program.

The cows were let out to pasture for full days around May 15, once the pastures greened up enough to receive them. In advance of taking the heifers up the road to graze on Jake's parents' pasture, they were given full reign of the barn, creating quite a stir. "The heifers were running around like a bunch of teenagers, kicking up their heels and yelling yooo-hoo!" Karen related. They took a video of the whole event. Now, there's a video to post to You Tube!!!

For more information on bedded-pack barns you can contact me, John Thurgood at 607-865-7090, jmt20@cornell.edu or Jake Fairbairn at 845-586-1255, oliver19554wd@aol.com.

John Thurgood is a Senior Whole Farm Planner for Cornell Cooperative Extension in Delaware County as part of the NYC Watershed Agricultural Program. The WAP (www.nycwatershed.org) works with farmers in the Catskills to develop and implement whole farm plans to protect the water supply for the nine million residents in and around New York City while enhancing farm viability.

Resource Spotlight

USDA-NRCS Environmental Quality Incentives Program (EQIP) and Conservation Innovation Grants

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program from the USDA Natural Resources Conservation Service. All sign-ups are conducted at USDA Service Centers at the local level. The program supports production agriculture and environmental quality as compatible goals. Through EQIP, farmers may receive financial and technical help with structural and management conservation practices on agricultural land.

The Conservation Innovation Grants (CIG) program is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies. Under CIG, EQIP funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations.

For more information on these funding programs call your local USDA-NRCS office. For EQIP information visit: www.ny.nrcs.usda.gov/programs/eqip/eqip2007/eqip2007.html. For CIG information visit: www.ny.nrcs.usda.gov/programs/programs/cig.html.

Conservation Innovation Grants
Semiannual Progress Report Template

Grantee Name: Watershed Agricultural Council of the NYC Watersheds, Inc.

Project Title: Demonstration of conservation & producer-based benefits of a bedded pack management system on a small intensive grazing dairy farm

Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: August 16, 2007 – February 15, 2008

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:
The elements of work completed in this reporting period include the observation, education and assistance for use of the project as well as working with the producer on record keeping of farm labor and economic analyses.

Describe significant results, accomplishments, and lessons learned.
During this period, the producer continued to properly utilize the new management system. The most significant result of the prior project period was continued dialog with the producer and monitoring of the complete system.

One article was written and submitted to the Small Farms Quarterly about the progress and status of this CIG project. See attached.

On August 23, - September 3, 2007, the CBP CIG poster and fact sheets were on display at the New York State Fair, Syracuse New York.

In September, the CBP project was toured by a group of Slow Foods representative in route to the Farm Aid concert in NYC. There interest was how to make farms more sustainable through reduced production cost and local niche markets.

Compare actual accomplishments to the project goals in your proposal:

Deliverables are being met in correlation to the proposal. All task and deliverables seam to be on schedule.

Describe the work that you anticipate completing in the next six month period:

The producer will continue to manage to project according to the Operation and Maintenance agreements for this project.
An additional tour is planned for the spring to share the conclusion of the use and results to date. Associated written outreach materials will continue to be produced over the course of the project.

The landowner will continue to be involved with the pasture group organized by WAC. There is a hope to more fully involve members of the pasture group in the progression of the project.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $824.00
   Cumulative: $11,592.40
   Payment made to producer:
   This period: $2,160.00
   Cumulative: $2,160.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**

Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned implementation meets HEL/WC, nutrient management planning and the mission of the WAC.

FALL 2007

SMALL FARM QUARTERLY

Good Living and Good Farming – Connecting People, Land, and Communities

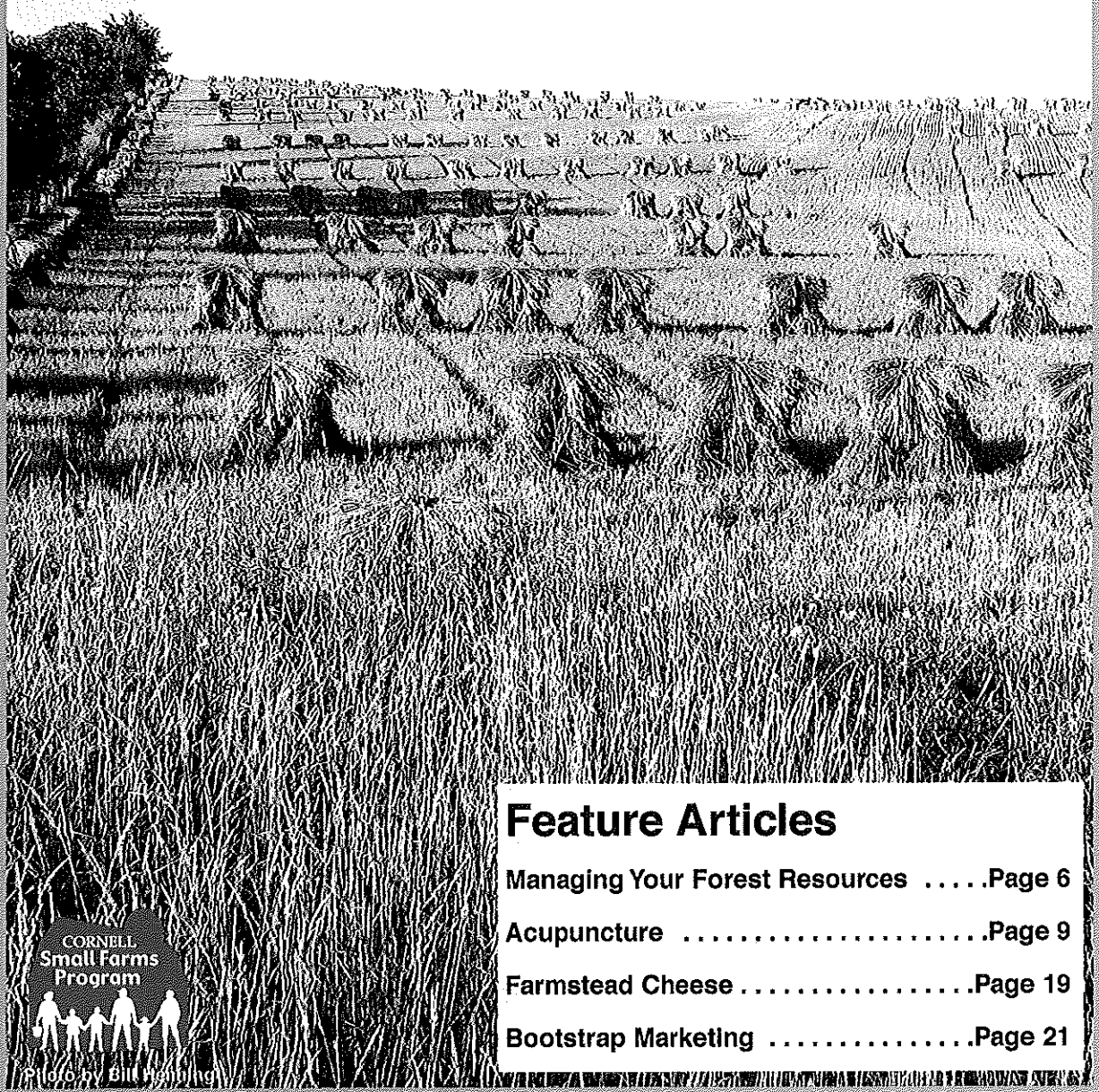


Photo by Bill Heuling

Feature Articles

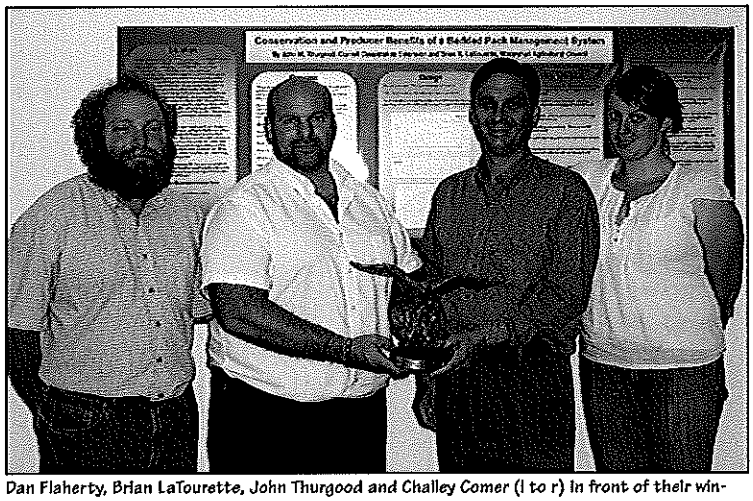
Supplement to Country Folks

STEWARDSHIP AND NATURE

Covered Bedded Pack Barn Project Receives National Award

In the Summer issue of Small Farm Quarterly we featured an article on Jake Fairbairn's covered bedded pack barn in Arkville, NY, a project which was funded in part through a USDA Conservation Innovation Grant. We're pleased to report that this project recently received highest honors at the Conservation Innovation Grant Showcase which was held at the National Conference of the Soil and Water Conservation Society of North America.

John Thurgood of Cornell Cooperative Extension of Delaware County and Brian LaTourette of the Watershed Agricultural Council received the award for their poster titled "Conservation and Producer Benefits of a Bedded Pack Management System" which explained the bedded-pack system that was implemented last fall on Jake Fairbairn's farm, Lazy Crazy Acres.



Dan Flaherty, Brian LaTourette, John Thurgood and Challey Comer (l to r) in front of their winning Conservation Innovation Grant Showcase poster.

The intent of the Conservation Innovation Grant is to explore non-traditional solutions to solve environmental concerns on the farm. The bedded pack management system consists of a steel framed fabric covered structure with ten foot high sidewalls. The barn houses the cows late fall, winter and early spring and allows the cows to loaf on a soft bed of straw. New bedding is added every other day to keep the floor clean and comfortable for the cows. All of the manure is stored in the bedding material until the summer when the material can be either spread on fields or composted. Jean Bonhotal, compost specialist of Cornell University has visited the site and says the bedded pack is well suited for composting.

Thurgood said, "This practice shows great promise for providing an economical way to store manure. The system not only provides for manure storage, it also provides for animal housing and can make daily chores much less time consuming and physically demanding." Thurgood says "Receiving the award was only possible because of our outstanding Watershed Agricultural Program team, innovative leadership of the Watershed Agricultural Council and a farmer that was willing to take the risk of having the system built on his farm." LaTourette added, "When we left for the conference we had no idea we would be shaking the hand of the national chief of the USDA Natural Resources Conservation Service [Arlen Lancaster], it was quite an honor."

Dan Flaherty, whole farm planner for the Watershed Agricultural Council is a creative thinker and discovered the bedded pack barn system in northern Vermont. Mr. Flaherty, farmer Jake Fairbairn and other program staff visited Vermont a couple of times and were impressed with the system. Flaherty stated, "Jake wasn't sold on the bedded pack idea at first, but after a while warmed up to the concept. The system can be managed with the equipment that small dairy farms have, the cows like it, and the bedding doesn't smell all that bad when it is emptied from the barn."

The system was implemented with funding from the Natural Resources Conservation Service's, Conservation Grant Program and The Watershed Agricultural Council. The overall project manager was Challey Comer of the WAC. The structure designed by WAC engineers Mike Sinniger and Paula Christman. Christman related, "The barn sidewalls and posts are constructed of untreated hemlock and locust, since Jake said he may want to produce milk organically in the future and treated lumber is frowned upon by organic certifiers. A local forester supplied the lumber."

The cows spent last winter and early spring in the barn this year and did very well in the new system. Fairbairn said, "My cows are in better condition and my yearlings have done better than ever... they really look great. The cows were happier and so was I."

The bedded pack system is now being studied by Marlane Kiraly, educator for Cornell Cooperative Extension in Delaware County, who will be researching how the system affects farm profits and labor. Kiraly stated, "If the system pans economically we may see a lot more bedded pack barns in the future."

Resource Spotlight

New Alternative Swine Production Health Reference

In recent years there has been dramatic growth of specialty markets for meats produced on farms that satisfy new sets of consumer preferences. These production systems bring special opportunities and also unique challenges. A new guidebook, Managing for Herd Health in Alternative Swine Systems, draws on the knowledge of veterinarians and experienced producers who are successfully working in alternative production systems.

"Alternative swine systems" often differ from a typical, "conventional" operation both in the inputs they use and in the way pigs integrate with the overall farm. There is likely to be tighter integration, with crops providing bedding and in turn relying on swine manure returned to the field. Swine pasture may rotate with other crops. Alternative swine systems are often tied to specific premium markets that determine some of their production practices. Typically this includes the avoidance of antibiotics. It may also include practices to assure animal comfort and restrictions on synthetic wormers.

Managing for Herd Health represents a three-year effort by swine producers, field veterinarians, ISU scientists, and the nonprofit organization Practical Farmers of Iowa (PFI, www.practicalfarmers.org). Real-world examples and producer profiles are spread throughout, as are "words of wisdom" from experienced hog farmers.

Copies are available without charge from Practical Farmers of Iowa. Contact the PFI/ ISU Extension Farming Systems Coordinator Rick Exner, 515-294-5486, dnexner@iastate.edu. The 50-page guide is also available at www.pfi.iastate.edu/pigs.htm, where you can download updated versions of guide chapters and also leave your comments and suggestions for future revisions.

Conservation Innovation Grants
Semiannual Progress Report

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Project Title: Demonstration of conservation & producer-based benefits of a bedded pack management system on a small intensive grazing dairy farm

Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: February 16, 2008 - August 15, 2008

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:

The elements of work completed in this reporting period include completion of the farm labor and economic analyses and several outreach events and showcase opprotunities.

Describe significant results, accomplishments, and lessons learned.

During this period, the landowner/producer continues to fully use and appreciate this innovative BMP. The management learning curve is complete and the farmer has gained the ability to operate this BMP very well for water quality and as a valuable tool.

The WAP engineering design team has completed a specification sheet with drawings and typicals to be included in the Information Bulletin being compiled by John Thurgood of DC CCE. This Information Bulletin will also include all research and comparison work completed within this grant.

All deliverables from the farmer, Jake Fairbairn have been met. (Contract #290)
All deliverables from the CCE AG Leader, Mary Ann Kiraly have been met. (Contract #289)

Compare actual accomplishments to the project goals in your proposal:

During this period, many events were held promoting this innovative BMP.

Farm Tours/ Educational Events:

March 7, 2008 A tour of the Bedded Pack Facility was conducted in conjunction with Cornell Cooperative Extension of Delaware County (CCEDC). Approximately 45 farmers and agri professionals attended the tour. As a result of the tour, information was requested on the design of the building of BP from other agri professionals from outside the area.

March 11, 2008, John Thurgood and Paula Bagley provided a 3 hour presentation titled "Composted/Bedded Pack Barns" at the NYS SWCD Association's Water Quality Symposium. This presentation included a full power point presentation, information handouts and had 25 attendees.

March 28- 29, John Thurgood displayed the Bedded Pack Management System (BPMS) CIG poster and gave a presentation on their bedded pack at the Grasstravaganza in Binghamton, NY with over 500 people in attendance. Jake and Karen Fairbairn gave a presentation on their farm including the BPMS system during a concurrent session with about 30 people in attendance.

July 23, the CIG poster was displayed at the CCEDC Delaware County Board of Supervisors annual picnic. This was manned by John Thurgood who answered question when he described the project and answered the questions of the attendees.

Fay Bensen of Cornell Cooperative Extension displayed the BPMS CIG poster and provided information in the CCE Outreach building to some of the 80,000 attendees of the Empire Farm Days (EFD)in Seneca Falls, NY during the August 5, 6, & 7 annual show.
"The poster was an attention grabber at the EFD. I gave in depth descriptions to at least 20 people", stated Faye.
Bensen gave a talk about the BPMS last month to a beef group in Cortland NY (15 people).
Faye also gave a copy of the CIG poster to Matt Harbur, instructor at Alfred State College who displayed it in their agronomy building. Thus far, Matt has had one student conduct an independent study on the cost of different bedding materials.

August 16, the BPMS CIG poster, staff and information fact sheets were on displayed at the Delaware County Fair, Walton NY. This was part of the Agriculture Awareness Center sponsored by the Delaware Valley Agricultural Society.

The BPMS concept has stirred interest from all types of producers, especially those in organic farming. The loose housing, low cost barnyard and manure storage/composting opportunities and it's adaptability to grazing systems are positive attributes for those producers looking into new farm ventures. Benefits of this BMP are still being realized and analyzed.

Describe the work that you anticipate completing in the next six month period:

The producer will continue to operate and maintain this BMP as agreed upon in the O&M Agreement signed on November 2006. Impromptu visits to the farm by area planners, engineers and producers will continue on a requested basis. The Dairy Farm Business Summary (DFBS) and analysis will be completed and the Information Bulletin will include specifications, drawings and an informational bulletin about the CIG project as a whole. Associated written outreach materials will continue to be produced. The landowner will continue to be involved with the pasture group organized by WAC. There is a hope to more fully involve members of the pasture group in the progression of the project. A final CIG report will be developed and submitted recapping this entire grant project.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $3,470.00
   Cumulative: $15,062.40
   Payment made to producer:
   This period: $3,040.00
   Cumulative: $5,200.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**

   Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned implementation meets HEL/WC, nutrient management planning and the mission of the WAC.

Conservation Innovation Grants
Semiannual Progress Report

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Project Title: Demonstration of conservation & producer-based benefits of a bedded pack management system on a small intensive grazing dairy farm

Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: August 16, 2008 – February 15, 2009

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:
The elements of work completed in this reporting period include three educational efforts and continued writing and development of the Technical Bulletin.

Describe significant results, accomplishments, and lessons learned.
John Thurgood continued development of the Bedded Pack Management System technical bulletin by sending a draft to reviewers for their input. Thurgood discussed the bulletin with reviewers Mike Sinniger, PE and Bob Graves of Penn State University. Dr. Graves suggested more be added on the farmer's management of the pack. In addition, Dr. Graves stated that Penn State avoids listing dimensions in publications to prevent farmers taking exact dimensions off of plan sketches to build a structure without utilizing the services of a professional engineer which is critical. Instead PSU provides planning parameters. Mr. Sinniger agreed that this was the best approach. Dr. Graves also suggested that the bulletin be listed as a Case Study since the analysis was only done on one farm. This input was written into future versions of the bulletin.

Compare actual accomplishments to the project goals in your proposal:
During this period, three events were held promoting this innovative BMP.

Farm Tours/ Educational Events:
August 6- Presentation of the Bedded Pack Management System Poster at the Cornell Cooperative Extension of Delaware County picnic for the Delaware County Board of Supervisors- 14 hours

August 11- Presentation of the Bedded Pack Management System Poster at the Delaware County Fair

December 10- Presented the BPMS at the Northeast Certified Crop Advisors Training, 50 in attendance.

Describe the work that you anticipate completing in the next six month period:

The producer will continue to operate and maintain this BMP as agreed upon in the O&M Agreement signed on November 2006. Impromptu visits to the farm by area planners, engineers and producers will continue on a requested basis. An extension for this project was applied for and granted to continue work and complete the Information Bulletin which will include specifications, drawings and an informational bulletin about the CIG project as a whole. Associated written outreach materials will continue to be produced. The landowner will continue to be involved with the pasture group organized by WAC. There is a hope to more fully involve members of the pasture group in the progression of the project. A final CIG report will be developed and submitted recapping this entire grant project.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $2,719.20
   Cumulative: $17,781.60
   Payment made to producer:
   This period: $0.00
   Cumulative: $5,200.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**

   Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned implementation meets HEL/WC, nutrient management planning and the mission of the WAC.

Conservation Innovation Grants
Semiannual Progress Report

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Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: February 16, 2009 – August 15, 2009

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:
The elements of work completed in this reporting period focused on continued writing and publishing of the Technical Bulletin.

Describe significant results, accomplishments, and lessons learned.
John Thurgood continued writing and editing the Bedded Pack Management System (BPMS) Case Study (new title based on reviewer input). Work was also done relating to the final publication of the bulletin. Thurgood sought and obtained agreement of Cornell University to have the document published as a Department of Applied Economics and Management, College of Agriculture and Life Sciences, Cornell University, Extension Bulletin. Having the bulletin published by Cornell adds significant credibility to the work.
During this reporting period, a decision was made by the producers Jake and Karen Fairbairn to discontinue milking operations on this facility as they have decided to leave the area and pursue an alternate career in a children's camp and farm camp management. The farm and CBP structure will continue operation as a calf and heifer raising bedded pack facility by the landowners, John and Sally Fairbairn.

Compare actual accomplishments to the project goals in your proposal:

Farm Tours/ Educational Events:

Describe the work that you anticipate completing in the next six month period:

The landowner will continue to operate and maintain this BMP as agreed upon in the O&M Agreement signed on November 2006. The Information Bulletin which will include specifications, drawings and an informational bulletin about the CIG project as a whole. Associated written outreach materials will continue to be produced. A final CIG report will be developed and submitted recapping this entire grant project.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $1,648.00
   Cumulative: $19,429.60
   Payment made to producer:
   This period: $0.00
   Cumulative: $5,200.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**

   Many tools are in place to ensure that the project is compliant with HEL/WC provisions. The Whole Farm Plan for this operation was developed using the New York State Agricultural Environmental Management process. The planning team included a USDA-NRCS planner who ensures that all planned

implementation meets HEL/WC, nutrient management planning and the mission of the WAC.

START DATE: FEBRUARY 20, 2008
END DATE: MARCH 7, 2008
DATE: FEBRUARY 20, 2008 **FOR IMMEDIATE RELEASE**

CONTACTS:
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John Thurgood
Watershed Agricultural Extension Team Leader
Cornell Cooperative Extension in Delaware County
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ARKVILLE DAIRY TOUR HIGHLIGHTS
WATER QUALITY BENEFITS OF WINTER HOUSING

ARKVILLE, NY – The Watershed Agricultural Council and Cornell Cooperative Extension will host a tour of Lazy Crazy Acres, Arkville, from 1 p.m. to 3 p.m. on March 7. The tour will focus on the farm's winter housing of dairy cows, a set-up known as the bedded pack management system. The on-farm system was constructed with funding from the United States Department of Agriculture's (USDA) Conservation Innovation Grant (CIG) Program and the Watershed Agricultural Council (WAC). Farmer Jake Fairbairn, owner of Lazy Crazy Acres, is now into his second winter season managing the bedded pack system. Fairbairn will share his experience with this innovative Best Management Practice (BMP) and the success he's encountered in herd health, milk production, and winter housing efficiency. This BMP serves as a manure storage structure, barnyard water management system, feeding area and housing for the dairy herd.

Several agricultural professionals involved with the project will discuss various aspects of the bedded pack system. Dan Flaherty, Small Farms Program Coordinator at the WAC, will discuss environmental planning on the farm and the impact of the bedded pack BMP alternative to address farm runoff issues. Dale Dewing, Nutrient Management Specialist for Cornell Cooperative Extension of Delaware County (CCEDC), will highlight the nutrient management elements of the pack system including nutrient analysis, composting and application. Mariane Kiraly, Farm Business Management Extension Educator for CCEDC, will report preliminary results of the system's economics. On the design side, Natural Resource Conservation Service Civil Engineer Paula Bagley will explain the structure's general design parameters and details of Fairbairn's bedded pack system. For example, local wood products were used in the building's construction, as lumber without preservatives is required should the farm be operated under organic standards in the future.

The system was funded through the USDA CIG Program and by WAC. As part of the grant, an educational poster was designed and presented at the USDA CIG Showcase at the Soil and Water Conservation Society national conference in Tampa, Florida in May 2007. Brian LaTourette, WAC Agricultural Programs Manager, and John Thurgood, CCEDC Watershed Agricultural Extension Team Leader, accepted the Showcase's top honor for the team's entry entitled, "Conservation and Producer Benefits of a Bedded-Pack Management System." The poster is currently on display at the WAC and USDA offices at 44 West Street, Walton.

To register for the March 7 farm tour, contact Kim Holden at (607) 865-7090 or kmh19@cornell.edu by Monday, March 3. For more information on the bedded pack system, please call Dan Flaherty or John Thurgood at (607) 865-7090.

Cornell Cooperative Extension and the WAC are Equal Opportunity Providers and Employers. The Watershed Agricultural Council is a locally-based, not-for-profit organization whose mission is to support the economic viability of agriculture and forestry through the protection of water quality and the promotion of land conservation in the New York City watershed region. The WAC is funded by the New York City Department of Environmental Protection, the U.S. Forest Service and other public, foundation, and private sources. For more information on the WAC, log on to www.nycwatershed.org; CCEDC can be accessed at www.counties.cce.cornell.edu/delaware.

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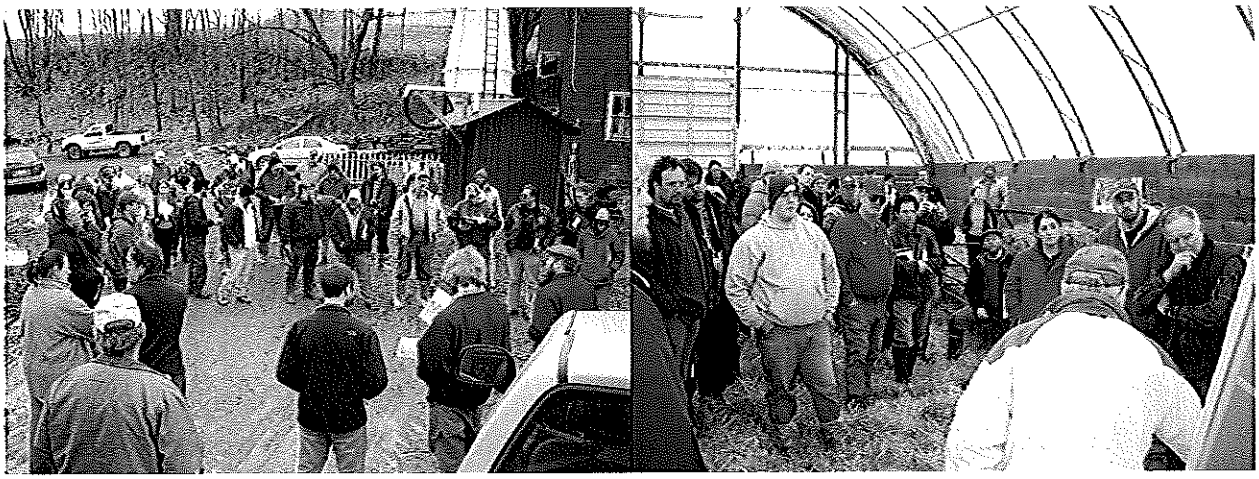
NYC Watershed Agricultural Program
Farmer Education Program Report
March 2008



Left: Dan Flaherty discusses the water quality issues addressed by the Bedded Pack Management System
Right: Dale Dewing details nutrient management aspects of the pack manure storage.

Bedded Pack Management System Tour was held on March 7 at Lazy Crazy Acres, the farm of Jake and Karen Fairbairn. Farmers and agency professionals from Marcy to Hudson Falls, NY came to learn about the bedded pack management system. The meeting was organized as a statewide outreach, a deliverable of the Conservations Innovation Grant that was obtained to build and study the system. Dan Flaherty, discussed whole farm planning and the need for the system, Jake Fairbairn relayed his experiences with managing cows on the pack. Paula Bagley of the Natural Resources Conservation Service detailed the engineering aspects of the pack barn. Dale Dewing, Cornell Cooperative Extension in Delaware County(CCEDC) /WAP relayed the nutrient management aspects of the system and Mariane Kiraley, CCEDC, focused on her study of economics and labor associated with the bedded pack system. After the tour farmers were treated to Sally Fairbairn's famous pie. The tour was well attended and each participant went home with a resource packet that included a primer on the system and three Cornell Small Farm Quarterly articles that featured the system. Lead: Dan Flaherty and John Thurgood.

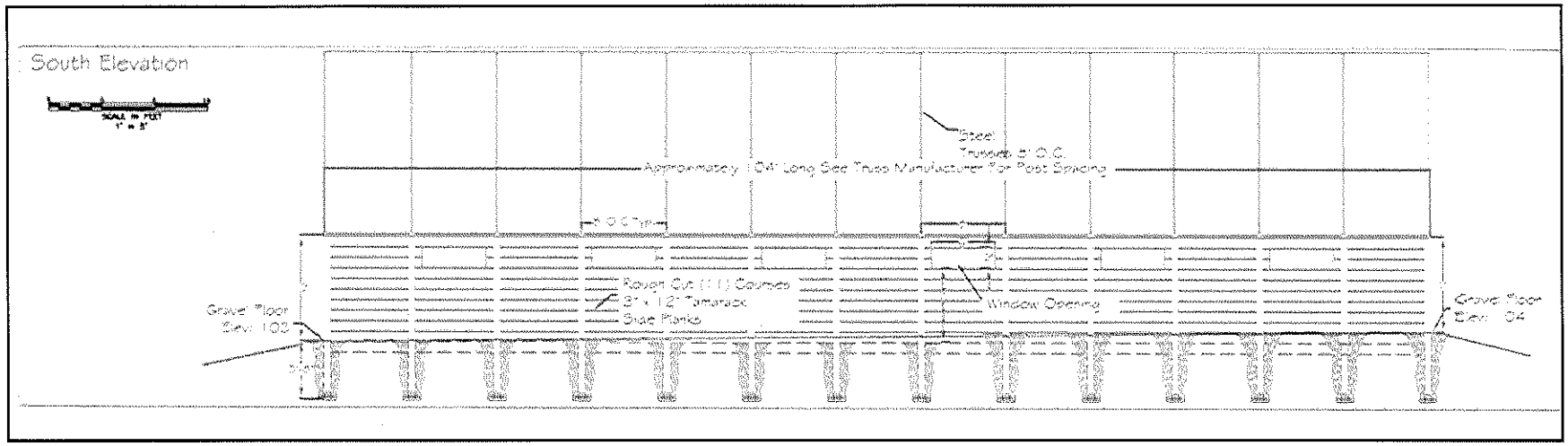
A ***No-Till Corn Planting and Forage Crop Seeding Seminar*** will be held March 19 at the Hamden Town Hall where participants will learn of farmers' successes and challenges with no-till operations last year. The program will also focus on the establishment of forage crops and no-till cover crops following corn crop removal. Cover crops reduce erosion and utilize nitrogen that would otherwise leach during the winter. Proper application of herbicides and insecticides along with pest scouting procedures will be discussed. Lead: Mariane Kiraly – CCEDC and John Thurgood.

Bedded Pack Management System -- Design

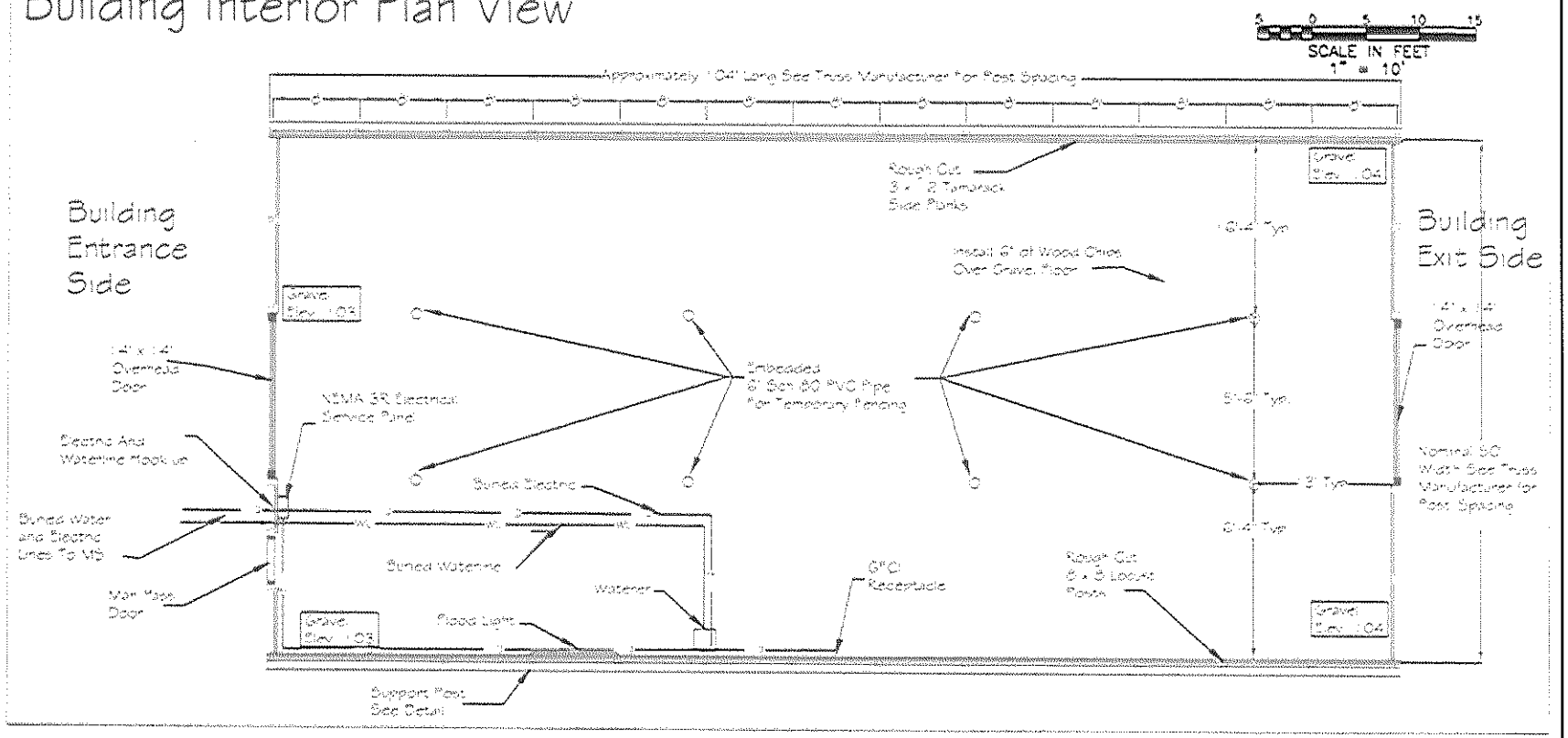
Space parameter- 100 square feet per animal unit.

100’ x 50’ structure, 10’ sidewalls, natural ventilation.

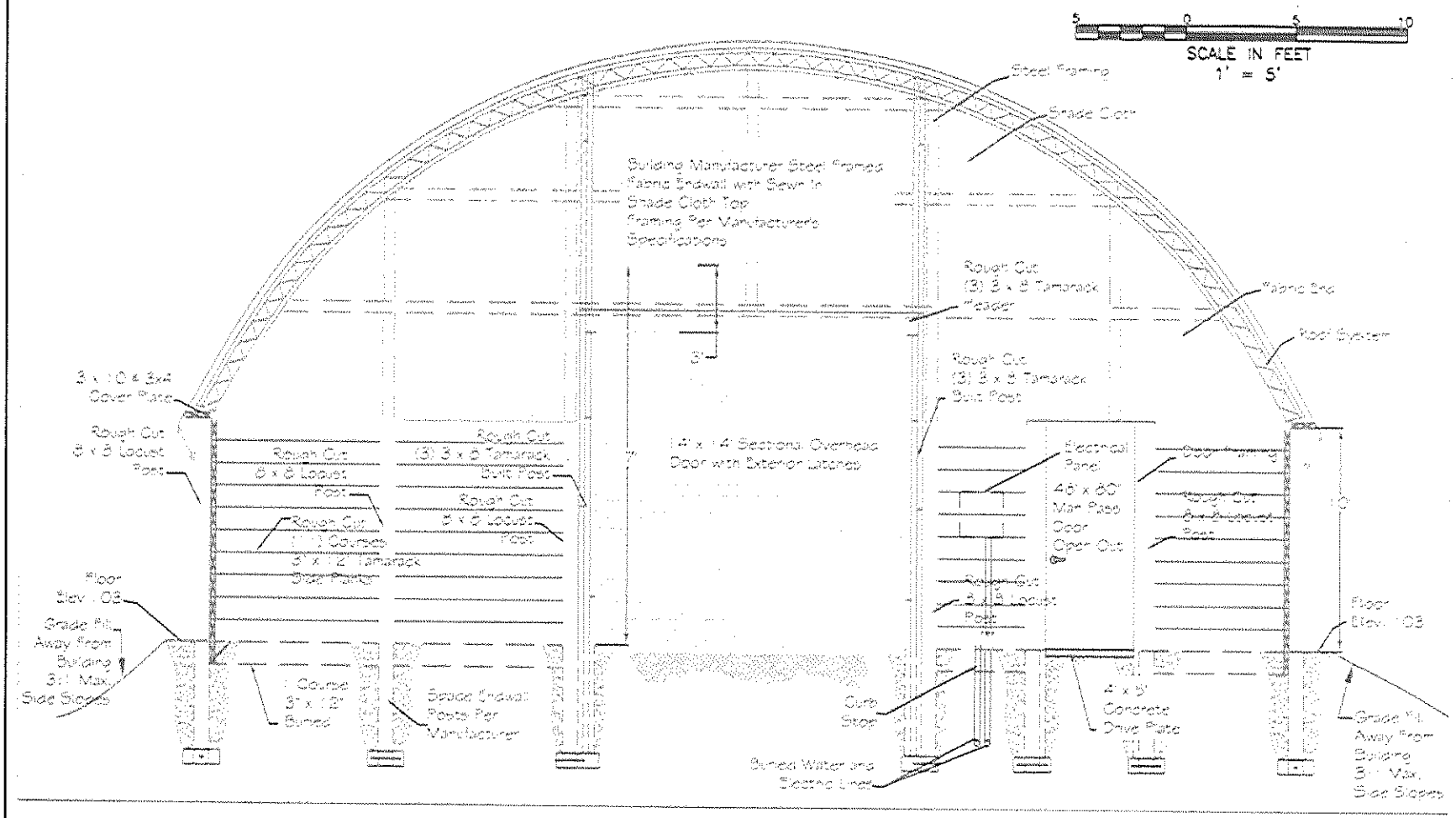
Local wood consisting of locust posts and tamarack sidewall planking, versus treated wood to allow for organic certification.



Building Interior Plan View



West Elevation



Conservation Innovation Grants
Final Report

Grantee Name: Watershed Agricultural Council of the NYC Watersheds, Inc.

Project Title: Demonstration of conservation & producer-based benefits of a bedded pack management system on a small intensive grazing dairy farm

Project Director: Brian LaTourette, Watershed Agricultural Program Manager

Contact Information: Email: blatourette@nycwatershed.org,
Mailing address: 44 West Street, Walton, NY 13856
Phone: (607) 865-7017 fax: (607) 865-7284

Period Covered by Report: August 16, 2009 – September 30, 2009

Project End Date: May 15, 2010

Summarize the work performed during the project period covered by this report:
The elements of work completed in this reporting period include publishing of the Bedded Pack Management System Case Study, distributing electronic copies and one outreach activity.

Describe significant results, accomplishments, and lessons learned.
The Bedded Pack Management System Case Study was published. The publication is housed on the Cornell University website:
http://www.aem.cornell.edu/outreach/extensionpdf/2009/Cornell_AEM_eb0916.pdf
This will also be added to the Watershed Agricultural Council website.

John Thurgood and Brian LaTourette distributed electronic copies of the publication to many agencies and organizations including the Natural Resources Conservation Service; Cooperative Extension in New York, Pennsylvania, Vermont, Rhode Island, Massachusetts, Connecticut, Maine, Ohio, Wisconsin and Minnesota; Pennsylvania Association for Sustainable Agriculture, Northeast Organic Farming Association, Soil and Water Conservation Districts in New York, and building suppliers.

Compare actual accomplishments to the project goals in your proposal:
During this period, the Bedded Pack Management System was presented at the 5th National Small Farms Conference in Springfield, IL.

Farm Tours/ Educational Events:

-September 15, 16, 17- Presentation of the Bedded Pack Management System Poster at the 5th National Small Farm Conference.
-September 17 – Oral presentation of the Bedded Pack Management System at the 5th National Small Farm Conference. An abstract, paper and PowerPoint presentation were also prepared for the conference.

Describe the work that you anticipate completing in the next six month period:
Final reports, Informational Bulletin, budget details and close out paperwork will be submitted to NRCS CIG Coordinator.

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

1. **A listing of EQIP-eligible producers involved in the project, identified by name and social security or taxpayer identification number.**
   John R. Fairbairn, SSN: 061 32 3444

2. **The dollar amount of any direct or indirect payment made to each individual producer or entity for structural, vegetative, or management practices. Both semiannual and cumulative payment amounts must be submitted.**
   Payment made toward structure:
   This period: $0.00
   Cumulative: $224,753.00
   Payment made under Cornell Cooperative Extension Contract:
   This period: $1,112.40
   Cumulative: $20,842.00
   Payment made to producer:
   This period: $0.00
   Cumulative: $5,200.00

3. **A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.**
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