

Women Caring for the Land: Improving Conservation Outreach to Iowa's Female Non-Operator Farmland Owners



**A Conservation Curriculum Manual for Conservation Agencies,
Not-for-Profit Organizations, and Community Groups**

**Created by Women, Food and Agriculture Network with funding from the Iowa
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Acknowledgments

This manual is the product of a decade-long partnership between Women, Food and Agriculture Network (WFAN) and Iowa's women farmland owners – some of the most dedicated conservationists in the state.

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Overview

Women, Food and Agriculture Network (WFAN) has been serving Iowa's women farmers and farmland owners since our founding as a non-profit project in 1997. The network was created to provide women involved in sustainable agriculture and food systems development with information, networking and leadership development opportunities.

Over the years, we have learned that women farmland owners express very strong conservation values, but often feel unsure of how to translate those values into action. Most of them are not the primary operators of their farmland; they lease the land to a tenant and rely on him to manage it using accepted best management practices for soil and water conservation. But an increasing number of women landowners are inheriting the land from their husbands and fathers, and as sole owners these women have a strong interest in learning more about their rights as landowners, about best management practices, and about state and federal cost-share and loan programs available to help them.

Women in all sectors consistently show a preference for informal, peer-to-peer learning models, based upon the concept of "learning circles." Learning circles are flexible, peer-directed, facilitated learning experiences, built upon the idea that every member has something to contribute and that every member has something to learn. Non-traditional learners are most likely to take action when information is offered in this setting, and when they feel comfortable asking questions and sharing information with one another, as opposed to traditional classroom presentation-style methods of information delivery.

WFAN has developed a program called *Women Caring for the Land* (WCL) designed to serve female non-operator landowners who are interested in learning more about conservation. Of the 45 women who participated in the pilot project in eastern Iowa in 2009, half took at least one conservation action within the following year. (For more evaluation results, visit www.wfan.org.) The program is successful, popular, and in demand. This curriculum guide is our effort to share the methodology, rationale, and some of the activities and resources we use, with the broader conservation community. Women landowners now own about half of Midwestern farmland (acres) and make up about half of farmland owners (population), and they are willing and capable conservation partners when effectively informed and motivated.

Why target conservation outreach to women landowners?

Women farmland owners are a vital and often under-served segment of the conservation partnership in Iowa. Women currently own or co-own nearly half the farmland in Iowa (47%; Duffy & Smith, 2008). Significantly, the age of farm owners is also rising, which is likely to result in more women inheriting farmland over the coming decade from spouses and parents. In 2007, women over the age of 65 owned over one-fourth of Iowa's farmland (Duffy & Smith, 2008), a percentage expected to rise over the next decade. Ten percent of Iowa's farmland is owned by women 75 and older.

These older women farmland owners typically have not participated in land management decisions in the past, leaving those decisions up to their husbands or tenant farmers. In other words, most are classified as “**non-operator landowners.**” However, based on our ongoing work with them, we find that a significant number of them are eager for information and support in conservation planning, and will take action once these are provided.

The opportunity to reach this group of women will approach a high point over the next 10 years, as the demographics of farmland ownership change; farmers are aging, male farmers are passing away, and women in their 60s, 70s and 80s are inheriting family farms. Many of them are very eager for information and support in their desire to pass on the farm they love to a new generation of family farmers who will protect and preserve it by farming sustainably and implementing a full range of conservation practices.

If Midwestern conservation partners can more effectively serve this segment of landowners before the land transitions again over the next decade, the positive impact on Midwestern land, water and air could be tremendous.

In our work with women landowners, Women Food and Agriculture Network has found that, although women have consistently indicated strong conservation values in surveys (Women, Land and LegacySM, 2007), they report a lack of information and confidence in implementing conservation practices, and do not participate in conservation programs at any higher rate than men; only seven percent of land in Iowa in 2007 was enrolled in some type of formal conservation program (Duffy & Smith, 2008). In fact, Eells’ research shows that women landowners participate in conservation programs at a much lower rate, in stark contrast to their stated values and beliefs (Eells, 2008).

In WFAN meetings, non-operator women farmland owners often report that they feel intimidated or ignored when they ask questions about land management or conservation of their tenants or agency staff. Some of this barrier could be attributed to their age and their lack of experience in participating in management decisions to date. Women often do not use or understand the language that agency staff or tenants use to describe land management issues. Eells also found that conservation materials in use by agencies do not appeal effectively to this demographic; none of the photos in the brochures are of older women, language tends to be technical and use unfamiliar acronyms, and the design is clearly aimed at a male audience.

From the results of surveys and meetings, we can begin to build a picture of a typical female farmland owner in the Midwest:

She is 65 years old or older. She is increasingly likely to be a widow. She may retain ownership of her farm for family or sentimental reasons. She probably rents her land to a tenant, using a cash-rent system, and relies on the tenant or a professional farm manager to make management decisions about her land. However, she is very strongly in favor of conserving the soil and water on her farm, and is eager for information on best practices, available programs, and how to communicate with her tenant on a

conservation plan. She is more likely to attend an informal peer-to-peer meeting to obtain this information than to contact an agency or look on the internet, and more likely to take action after a meeting of this type than a traditional “classroom-style” presentation.



Other demographic data relevant to conservation outreach to women landowners emerge from *Farmland Ownership and Tenure in Iowa, 2007* (Duffy & Smith, 2008):

- Female landowners are older than male farmland owners, on average. Sixty-one percent of the land owned by females is owned by those over 65 years of age, compared to 51 percent of land owned by males.
- Thirty-two percent of the land owned by women is owned by widows, and the number of widowed owners is rising.
- Forty-one percent of the land owned by women is under professional farm management.
- More women are likely to own land for “family or sentimental reasons” than men: 25 percent vs. 20 percent of those surveyed (as opposed to long-term investment or income).
- Although males own 54 percent of all land, females own 61 percent of rented land. This follows the pattern of a national study finding ownership of leased farmland to be higher for females (1999 Agricultural Economics and Land Ownership Survey (AELOS) published by the USDA/NASS with data from the 1997 Census.)
- Females rent 77 percent of their leased acres using cash rent rather than crop-share or other arrangements, although they are slightly more likely to crop-share than men who lease their land.
- All farmland owners surveyed said they prefer personal interactions or postal mail when learning about land management options, as opposed to the internet.

This guide will describe various elements of the Women Caring for the Land learning circles methodology, which any agency or non-profit may use as a whole or in part to improve their conservation outreach to women farmland owners.

Learning circles methodology

A “learning circle” is one way of describing the informal, peer-to-peer meeting format that women consistently say they prefer. Over time and across countries, civic organizations, neighborhood communities, trade unions, churches and social justice groups have used the idea of learning circles to empower their members to make choices and take action. These are conversational meetings, facilitated by a woman, and are structured very differently from the traditional classroom-style meetings most agencies and organizations typically host.

At a learning circle meeting, the women are considered the experts on their own farmland. Before any information or resources are mentioned, each woman in the room is asked to take at

least 5 minutes to describe her land or farm, her goals and dreams for the land, and any challenges she has faced.

The older, non-operator women landowners who typically attend WCL meetings have widely varying educational levels. Some have advanced college degrees; some may have finished formal education after 12th or even 8th grade. The latter often are not confident readers or writers, making the informal, conversational format of a learning circle particularly useful for them as non-traditional learners.

At a typical WCL learning circle meeting, a group of 12-20 women landowners from two to four contiguous counties gather at a public meeting place. The meeting space is set up so that women may sit in a circle or U-shape, so they are able to face one another. A female staffer from the host organization facilitates and helps direct the discussion. The facilitator sits among the group rather than standing at the head of the room as a presenter would. The emphasis is on respectful listening, equal time for sharing thoughts and concerns, and sharing wisdom among the members of the group, including – but not limited to – the conservation professionals.

Potential partners

WFAN has collaborated with staff members of NRCS, FSA, DNR, University Extension, Soil and Water Districts, and a variety of non-profit organizations that are active in the meeting areas. These local partners help us identify meeting facilities, arrange for area farms to tour, find mailing lists of women landowners, publicize and facilitate meetings, identify restaurants or caterers to provide meals, and many other crucial tasks.

At the same time, our agency partners experience the difference a peer-to-peer meeting format can make in achieving more effective conservation outreach to women farmland owners. One Iowa Department of Natural Resources staff member, an 11-year conservation education veteran, attended some WCL meetings and wrote: “I was skeptical about the length of the meetings and the meeting format, but I am now a believer. I used to subscribe to the belief that people make decisions based on logic, and presenting accurate information was the most important thing you could do. I now know, however, that very few people make decisions based solely on logic. Most of us have to be engaged at an emotional level to make a change. The [learning circle] format is a great way of doing that.”

A staff member for a Nebraska non-profit partner who helped coordinate a set of meetings in her state advocated for a longer series of meetings, to accommodate the obviously strong desire on the part of the women to continue sharing with one another. She wrote, “The introductions take a long time and I think that is because you have given these women a platform/place in which they can FINALLY be heard! You can just see it in them, they are finally being listened to and because of that, they like to share a lot and I think that is fantastic.”

Publicizing the meetings

WFAN has tried a wide variety of methods of contacting women farmland owners, both directly and indirectly. Here are some of the methods you may want to try, with a few pros and cons gleaned through our experience:

Direct mail:

If you have access to lists of women farmland owners through NRCS or FSA, sending a letter of invitation to each woman in the target area is one of the most effective methods of outreach. If you are not part of a federal agency, but can partner with one, you may be able to pay for postage and printing and have the agency send out the mailing. (Due to privacy laws, agencies are generally not allowed to share these lists with outsiders.)

A more time-consuming way of finding the landowners is to go through county assessor rolls. Some landowner lists are available on assessor websites as electronic files; others must be requested on disk or as hard copy by calling the assessors' offices for the target counties. In general, look for names of owners that are not listed in care of trusts, banks, or care facilities.

Community newspapers:

Create a news release and send it to as many of the daily and weekly newspapers in the target area as you can identify. The Iowa Newspaper Association website has a member database that is searchable by city and county; other states probably have a similar resource. Don't forget to send your release to the free weekly shoppers: many rural residents are more likely to read the weekly shopper than the newspaper.

Radio and TV:

If you can get on a local radio or TV community calendar or, better yet, talk show, you will greatly increase your reach among this older demographic.

Organizational listservs:

Send your release to as many organizations with clients or members in the target area as possible, and ask them to share widely.

Other possibilities:

Fliers or postcards left in public places such as banks, libraries, etc.; church bulletins; garden club newsletters; rural electric cooperative (REC) magazines; statewide newspapers, and other agricultural publications.

A note on women-only meetings

We have found it very important that, at least for the morning discussion portion of the agenda, only women are allowed in the room. No matter how helpful or low-key they are, the addition of even one gentleman to the mix will significantly alter the dynamic of the conversation, and make

some women – particularly those 65 and older – very unlikely to speak up. We have observed this numerous times.

During or after the lunch, and during the afternoon field tour, male staffers from area agencies are welcomed into WCL meetings so that the women can meet them and begin to develop a level of trust with the staffers. We believe this will help them become more comfortable seeking out help at the county office following the meeting.

Most conservation staffers have readily understood the importance of providing a “safe space” for women to discuss land management and farming issues with their peers. If they (or the women’s male relatives, spouses or tenants) call to object or ask why they are not invited, we have simply tried to explain that women tend to be more forthcoming about their visions and challenges in the women-only format. If this remains a problem for anyone, it’s likely that the woman will not attend the meeting. Facilitators will need to learn to accept that this format is not appropriate (or accepted) for all women.

The social element of landowner-tenant relationships

It is very important to remember that **informing** non-operator women landowners about conservation concepts and options is only one part of a successful outreach effort. Perhaps even more important is **empowering** her to take action based on her knowledge and values.

We have heard repeatedly at meetings that women feel uncomfortable talking to family members or tenants about making changes in farm management practices. Lack of knowledge of conservation terms and options is only part of the problem. The other issues are social and cultural. Women often “inherited” a tenant along with the farmland. The tenant may be a neighbor, friend, or family member, who goes to church with the landowner and is part of her community. There is tremendous social pressure to gloss over questions or problems that arise related to farm management. Women in particular are sensitive to the social ramifications of expressing or even implying criticism of the tenant. Gender and age discrimination are definite factors in many landlady-tenant relationships.

(We have also heard from some tenants who would like to manage land more sustainably and whose landladies or landlords discourage them, but this seems less common than the reverse.)

It is important to allow women to discuss this aspect of the issue when they are together at a meeting. They gain a tremendous amount of relief (“I realized today that I’m not alone,” said one woman) and self-confidence (“This meeting has changed my life,” said another). This kind of mindset change results in much higher likelihood that women will take action on conservation, and be successful when they do.

Here is a link to a page on the Drake University Agricultural Law Center’s excellent new website, Sustainable Agriculture Land Tenure (SALT), related specifically to talking with tenants: <http://sustainableaglandtenure.com/2010/08/talking-to-the-tenant/>

Selecting a meeting facility

Choose a public, easily accessible meeting place, with adequate parking, where women will feel comfortable chatting. WCL has held successful meetings in:

- library meeting rooms
- community centers
- college/community college classrooms
- county nature centers
- church meeting rooms

Set up the meeting room chairs and tables in a U-shape or circle, so that women can comfortably take notes but can see one another easily for ease of conversation.

Facilitation

Much of the success of a learning circle meeting depends upon the facilitator. The conservation professionals or organizational representatives responsible for facilitating the meeting should be prepared for a discussion that will operate in a much more informal and fluid way than you have probably experienced before. Plan to kick back, relax, model the introduction (see below), and listen through the other participants' introductions for things mentioned by more than one landowner, taking notes on what information you could offer either to them individually or collectively that they could share later when appropriate.

You do not need to prepare a formal presentation, because you will be responding directly to the ladies' questions and those questions will fall into your normal service role -- or you'll be able to point them to where they can get answers or help. Most questions are very basic, reflecting the basic level of knowledge of most non-operator landowners (male or female).

At the beginning of the discussion, introduce yourself and welcome the women. Tell them you appreciate their taking time to attend the meeting, and their interest in conservation. Set the informal tone by assuring them that there are no "dumb questions," that all will have a chance to speak, and that when a woman is speaking, the others will listen without interrupting.

Go over the agenda for the day, and stress that this meeting is theirs to direct; tell them that topics will be explored in more depth throughout the day based on what they want to discuss most. For example, in some counties, women landowners may have a lot of interest in the costs and benefits of crop residue removal for ethanol production; in others, pasture and woodland management may come up more often. The facilitator(s) will listen as women give their 5-10 minute introductions to identify common topics that come up more than once.

Give an example of this introduction by giving the first one yourself. Tell them who you are, where you're from, whether you own farmland, and if so, what conservation issues you face. Then go around the room in order and give each woman a chance to tell her story. Try to gently

manage this discussion so that women who are hesitant to speak are encouraged to do so, and those who tend to dominate are not allowed to take more than their share of time. Also pay attention to tone; women with different types of farming operations are sometimes very passionate about their choices (e.g., conventional vs. organic or alternative ag). It's important for the facilitator and other participants to be respectful of one another's choices. You may want to mention this at the beginning of the discussion.

Resources to provide participants

Conservation materials are available from the state offices of the USDA – NRCS, the FSA, state departments of natural resources and agriculture, and county soil commissions and conservation agencies, as well as private companies and non-profits such as land trusts, etc.

In Iowa, we offer the following additional resources to women landowners, which may be helpful in other states as well. If you are working in another state, we expect that you will compile a collection of other resources that may be helpful to non-operator woman landowners.

[Sustainable Agriculture Land Tenure \(SALT\) – Drake Agricultural Law Center \(website\)](#)
[Landowners' Options: Safeguarding Iowa's natural resources for the future \(52 pp. booklet published by the Iowa Natural Heritage Foundation\)](#)
[Iowa State University Ag Decision Maker: Lease Supplement for Obtaining Conservation Practices and Controlling Soil Loss \(website\)](#)

Evaluating the success of your meeting

As mentioned above, older women landowners are not all confident readers or writers; some are also uncomfortable filling out surveys for privacy reasons, even when assured of their anonymity. These circumstances present special challenges for meeting sponsors who want to evaluate the effectiveness of the meeting format and content, and to survey participants at intervals after the meetings to find out what actions they have taken as a result of their participation.

WFAN does ask participants to fill out a brief written evaluation at the end of the day. However, our most useful data comes from personal interviews, which are usually conducted by telephone at around six and 12-month intervals after the meeting date.

Conservation Activities

The set of activities included in this section of the guide are intended to communicate basic conservation concepts, stimulate meaningful discussion, or ideally, both.

These nine activities vary in complexity, both in their preparation and execution, and the conservation concepts they are designed to illustrate. We expect that some activities will be most useful for groups in which the basic level of conservation understanding among the women landowners is quite low. Other activities will allow participants with more familiarity with the concepts to delve a bit deeper into the topics. For groups that include both types of participants, even a simplistic activity can be a good review for more knowledgeable participants, while allowing those new to the concepts to catch up with their peers in an interactive, non-threatening way.

The activities were designed by a team of professional conservation educators in Iowa, and most have been field-tested with a group of Iowa women landowners during 2011. However, they are still very much open for improvement and should be considered works in progress. We hope that some of them can be adapted to the different land forms and conservation issues in other states. Please use them as examples and starting points for your own work with women landowners. You are welcome to use them as written, or adapt them as needed.

If you have constructive feedback after testing these activities in your area, or develop entirely new activities which work well, we would appreciate hearing from you about them, and – with your permission – including them in future editions of this guide and/or on the Women Caring for the Land website.

Activity 1: Women, Wildflowers and Wildlife: Restoring nature's bounty on your farm or homestead

Created by Danielle Wirth, PhD, Environmental Educator

Keywords

Prairie, savanna, habitat restoration

Concept(s)

Many women non-operator landowners report that they value their farmland for many reasons other than the income it can generate. They often remember the greater diversity of plants and animals that populated the landscape as they were growing up. This makes them excellent conservation partners in promoting biodiversity, and preserving and restoring prairie, savanna, wetlands, and other natural spaces.

Activity description

Participants will conduct a verbal inventory of their farmland's natural spaces, and be introduced to: how to identify prairie and savanna remnants; how to conserve these places, including practices that reduce soil erosion and increase the soil's health; and how to locate the abundant resources to accomplish their dreams for their land.

Optimum group size: 5 – 10

Preparation time: 15-20 minutes at a fabric or hobby store to purchase materials, 10 minutes to set up at the meeting site. Facilitator may also want to bring along a computer with internet access to help participants find the computer links, and a book display (see Resources section).

Activity time: Allow 45 minutes for them to create their tapestry.

Materials you will need

- Felt by the yard: 1 sq. yd. of medium green per 3 participants
- 8" x 12" felt rectangles in different colors (see below); quantity will depend upon the number who register.
 - Dark brown (fields) 1 sq. per 3 people
 - Bright yellow – (prairie) 1 sq. per 2 people
 - Bright orange – (fire) - 1 sq. per 4 people
 - Black – (roadways) - 1 sq./ 3 people
 - Dark blue – (ponds - 1 sq./ 4 people
 - Light blue (other water features) - 1 sq. per 3 people
 - Kelly green - large tree canopy (oaks and hickories) - 1 sq. per 3 people
 - Four or five sets of squares of various other colors (1 sq. per 3 people) to represent any other features participants want to put into their dream landscape, such as houses and barns, flower beds, etc.
- Scissors – at least 1 pair per every 2 people
- Fabric glue to secure the felt onto the background – 1 bottle per 3 people
- Black yarn to represent fence lines or borders of the property – 1 skein should serve entire group

Activity directions

In this activity, women landowners will be “dreaming” their prairie and/or savanna homestead into being, using a felt background for their farm, and smaller felt pieces and yarn to add the natural features and buildings, roads, etc.

First, the facilitator should define “prairie” as the original grassland and wildflower plant community that covered nearly 75% of Iowa in pre-settlement times. Define “savanna” – sparsely spaced, open-grown oaks with spreading canopies almost as wide as the tree is tall. Under the oaks are specialized plants including wildflowers, grasses, sedges and ferns. The trees themselves also provide food and shelter for various plants and animals. The plant community thrives on dappled sunlight and periodic fire. In places where fire is not practical, mowing and/or grazing can be used to simulate the historic beneficial disturbances of grazing buffalo and fire.

Ask the participants to list some of the reasons for creating natural areas on their land, which may include:

- Beauty
- Increasing ecological services, such as erosion control, water filtration and retention, and flood mitigation
- Wildlife habitat
- Recreational value (hunting and fishing)
- Legacy value – leaving a beautiful piece of land for future generations
- Spiritual renewal, connecting with nature
- Creating and maintaining a place to walk, wander, and explore with family and friends

Invite the participants to talk about what natural features they currently have on their farm and what else they might want to see there. What would please them visually? What features, attributes or additions might encourage them to walk through their home landscape and share that land with others – maybe their grandchildren? Do they have any concerns right now that the resource people at the meeting might help them address?

If possible, show a completed felt tapestry depicting the vision a woman had of her land in post-restoration condition, from a prior meeting, or prepared by the facilitator for her own land. If possible, include an aerial photo of the property to help women visualize the correlation between the “dream” landscape and the one that exists now.

Provide each participant with her “field of dreams” (the green felt). Place the remaining materials (small felt squares, glue, yarn and scissors) in a central spot.

When most participants are finished, ask each participant to show her felt tapestry and talk about what she has created. Participants will encourage and appreciate one another’s creations, and the resource persons present can answer related questions that may arise, such as how to do a land inventory, best management practices, state and federal programs to support restoration projects, etc.

Photos:



Resources (see appendix)

Activity 2: Measuring and evaluating crop residue for erosion control

Created by Julie Sievers, Environmental Specialist, Iowa Department of Natural Resources

Keywords

soil, erosion control, crop residue

Concept(s)

Leaving crop residue on the soil surface in tilled fields can minimize surface runoff and soil erosion, improve water infiltration, and increase organic matter content. Most experts suggest that effective conservation tillage systems leave at least 30 percent residue cover after planting. Additional residue is recommended on soils with steeper slopes where the potential for erosion is greater.

Residue management is becoming an increasingly important issue, as the market for crop residue increases for cellulosic ethanol production and livestock bedding.

Activity description

The focus of this activity is to use common household items and concepts to help women landowners understand the costs vs. benefits of allowing crop residue to be removed from their fields, and to teach them two simple methods of measuring the amount of residue in their fields (photo comparison and line transect). Recognizing the differences in erosion control related to the amount of residue is important for many reasons, including determining conservation compliance on highly erodible land (HEL) for farm subsidy programs.

Optimum group size

This activity can be used with any size of group. You will need to adjust the total number of residue photographs for the size of the group, as the breakout groups need to be no more than 3 to 5 people so they each have an opportunity to look at the photos. If you have a small group, you may want to prepare a measuring rope for each participant (as described below).

Preparation time: 30 to 60 minutes to gather/purchase materials and to mark rope (if using)

Activity time: 15 to 30 minutes, depending on the amount of discussion. The placemat/tablecloth portion should take no more than 5 minutes; breaking into small groups and review of the photographs should take not more than 10 minutes (be sure to tell the participants that up front), and the remainder for discussion.

Materials you will need

- Placemats or tablecloths of different thicknesses (for example, a lace tablecloth, thin fabric placemat, and thicker quilted placemat)
- Photos showing close-ups of three or four different levels of crop residue in a harvested field. (This activity in Iowa featured photos showing corn and soybean residue levels ranging from 20% to 70%. These photos are available for your use at www.wfan.org/xxx.) The facilitator should code the photos so she can tell the

percentages but participants can't see then numbers. Each small group (3 to 5) of participants will each need one full set of photos.

- Rope or measuring tape to demonstrate residue measuring technique. If you are using rope, use 20-foot lengths marked in one-foot segments. If using a tape measure, it must be at least 20 feet long.
- A four-foot square of fabric with speckles or a multi-colored pattern to simulate field residues; alternately, the carpet or flooring in the meeting room can often be used for the demonstration. If using fabric, the material can be placed on the floor and the group stands around the outside of it when it is time to demonstrate measuring residue.

Activity directions

1. Introduce the concept of residue functions by discussing how placemats and tablecloths protect a table. Ask them what happens if you spill a glass of milk on a table with nothing on it (splashes and runs off). This is a like field with no residue; rain will splash onto it and will run off after the ground is saturated. (Be aware that some people, especially older landowners, have been acculturated to like this “look”; it appears clean and tidy, with no trash showing – a standard from decades ago.

Use a somewhat thicker placemat or tablecloth and have the same discussion; the placemat/tablecloth will hold some of the liquid, which is the same as a field with a little residue. Continue by briefly asking this question for each thickness. Participants will catch on rapidly to this simple introductory analogy.

2. Next, break the participants into small groups (3 to 5 are best). Distribute the photographs of fields with crop residues and ask them to estimate and jot down the percent of residue they think is on each field. Also ask for any thoughts on the benefits and disadvantages of different levels of residue. Allow 5 to 10 minutes for the groups to do this.

Bring the groups back together and lead a discussion of each photograph. During this discussion, tell them the actual amount of residue present in each photograph. Explain the differences in estimating residue for different crops (e.g., corn and soybeans).

3. Demonstrate the “line transect” method of residue measurement, either in an actual field of residue or using the room’s flooring material or a piece of fabric to simulate the field. Give each participant or small group of participants a 20-foot piece of rope marked at one-foot intervals, or a measuring tape. Count the number of times a marked line intersects with a piece of residue. (If using flooring or fabric, identify the color of speckle that represents residue.) If in a field, stretch the tape (or rope) between two stakes placed diagonally (at a 45 degree angle) of the crop rows. Looking directly from above the tape (vertically), count the number of times where a “foot” mark intersects with crop residue. Make consistent judgments--use only the left or right side of the foot mark on the tape (or rope) to avoid over-counting residue.



Multiply the resulting number by five, and that is the percent of residue in the field. If you use a 50-foot rope, multiply the result by two; if you use a 100-foot rope, the number of intersections translates directly into the percent of residue—for example, 38 intersections means 38% residue. (Description adapted from Iowa State University's Integrated Pest Management website, 2002).

Mention that they should measure residue in the spring, when soils are particularly vulnerable to raindrop impacts and erosion, but residue may also be measured in the fall. The most accurate estimate will come from averaging several measurements over a span of time.

This activity demonstrates how simple it is to estimate or measure residue, but that landowners need to actually get into the field to do it and not just look from the car or compare it to the neighbor's field.

During the discussion, introduce the concepts of the benefits and hidden costs. For example, some operators are seeing removal as a benefit, as corn stalks from some corn varieties are not breaking down (decomposing) as fast as they used to, and operators are having to use more aggressive means to promote breakdown of the stalks. The hidden costs may include the need to use additional inputs and the impact on soil quality over the long term. Stalks removed for use as livestock bedding or feed typically come back to the land as manure or compost, whereas removal for other purposes removes the residue and its value for good.

Iowa State University and the ethanol company which is developing the cellulosic ethanol process have determined that removal of 25% (1 dry ton) of crop residue may leave enough residue remaining for acceptable erosion control. But landowners should evaluate their own land before making a decision, including its slope, soil quality, the potential need for additional inputs, and other factors. See the Resources section for decision-making tools.

To end the discussion, ask the following or similar questions:

- How has the discussion changed your thoughts about residue?
- Do you see residue as a benefit or asset for your land? Why or why not?
- What thoughts do you have now that you didn't have before regarding residue?
- What action or first step will you take as a result?

Resources

Handout from the Iowa Learning Farm on Economics of Residue:

http://www.extension.iastate.edu/ilf/pdf%20files/residue_sheet.pdf

Estimating a Value for Corn Stover:

<http://www.extension.iastate.edu/agdm/crops/pdf/a1-70.pdf>

Methods for Measuring Crop Residue:

<http://www.ipm.iastate.edu/ipm/icm/2002/5-13-2002/cropresidue.html>

Materials from Residue Matters:

<http://www.residuematters.org/>

Information from POET ethanol plant:

3. Saving Our Soils: Using tillage techniques and cover crops to minimize erosion

by Karen Grimes, Information Specialist, Iowa Department of Natural Resources

Keywords

soil, erosion control, grassland, pasture

Concept(s)

Topsoil is the thin productive level of the soil, high in organic matter and nutrients, which is essential for efficient food and feed production. Midwestern topsoil has been developed over thousands of years. Estimates differ, but experts say it takes 50 to 500 years to produce a single inch of topsoil. However, agricultural states are losing topsoil at an alarming rate, due to decades of production of annual grain crops that leave the soil unprotected for much of the year. Without a healthy layer of topsoil, farmers must add expensive nutrients and inputs to produce a crop. The movement of topsoil from fields into waterways also creates sediment, a major water pollutant.

Sediment often carries other pollutants along with it, such as excess phosphorus and nitrogen, and pesticides, creating water quality problems; it clogs stream channels, destroys fish spawning grounds, silts in and covers the hatching areas for many aquatic species. Large influxes of nutrients cause algal blooms, which cause oxygen sags as the algae dies. Blue-green algae blooms can produce toxins that can cause rashes, severe respiratory effects and even death of people, pets and livestock.

Activity description

This activity introduces the basic concepts of soil type, slope, and managing the farm to reduce erosion control by considering management practices such as tillage options, buffer strips, cover crops, etc.

Optimum group size: 10 - 15

Preparation time: 45 - 60 minutes to gather materials and soil and residue samples, prepare pans, and download and print photos (if using).

Activity time: 45 – 60 minutes

Materials you will need

- 3 disposable foil 1-pound loaf pans; pinch notch in center of short end of all three pans for water to drain
- 3 empty, small (low) baby food jars that are shorter than the loaf pans to catch water coming from them. (You might want 3 larger clear jars to pour these into if you use a lot of water and the baby jars get full.)

- 1 rectangular, low-sided 16-quart transparent plastic storage box. Should be wide enough to hold the three pans side-by-side, and long enough for a small jar to sit under the end of each pan – roughly 2 feet wide by 18 inches long.
- Locally obtained soil to fill the three loaf pans level full or just slightly above top of pan. Fill two with soil that has been tilled, either from a farm field or garden. Fill the third pan with un-tilled soil and living grass from a pasture or yard; grass may extend above top of pan. (Ideally all should be the same soil type – e.g., sandy, clay, etc.)
- Mulch, straw or corn stalk residue – enough to cover the soil in one of the loaf pans no more than 1/4-inch thick, leaving a few bare or sparsely-covered spots.
- Enough uniform wood or Styrofoam pieces to elevate one end of the loaf pans; 1X2 boards work well; should be at least an inch or two high and uniform in size, and short enough to fit in the storage box.
- A large watering can that sprays the water out in drops to simulate rain
- Water – a gallon or less (for one demonstration, more if repeating it for another group)
- Paper towels or toweling to absorb water and clean up

Optional materials

- Cocktail umbrellas on toothpicks to hand out as a reminder to put an umbrella over the soil
- 3 paint stir-sticks, painted white to stick in the three loaf pans, with a ruler to measure soil splash when the activity is finished
- Large photo of a raindrop splashing into soil ([available on the NRCS website under Photos](#))
- Other photos of erosion from the [NRCS website photo gallery](#) (search under your state, and the topic Erosion by Water), illustrating different types of erosion (rain drop, sheet, rill and gully) and different erosion control management practices (no tillage, conservation tillage, terraces, strip crops, cover crops, contouring, stream buffers, field buffers, pasture, hayland, woodland)



Activity directions

Before activity begins:

- Hang the large photo of a raindrop in a prominent place, or pass it around the room.
- Place all 3 loaf pans in storage box with one end elevated on the wood or Styrofoam pieces.
- Place an empty baby food jar under the notched end (lowest end) of the pans.
- Place one of the white paint sticks at the back (uphill) end of each loaf pan.

Background information

The facilitator can introduce this activity by explaining that topsoil consists of small particles: a combination of the smallest particle – clay, to the next largest – silt, to the largest – sand. When a raindrop hits bare soil, it first sinks in and fills the spaces between soil particles. Once the soil is saturated, one tiny raindrop can throw the soil particles high into the air, as high as two feet and as far away as five feet. Once the soil particle is detached, the runoff from rainfall can carry it away, off the field where it belongs, and into our streams and lakes.

Soil erosion varies between soil types. The amount of soil that erodes and is carried away by water is affected by:

- The amount of rainfall: more rainfall means more erosion
- The soil type: soils with large particle sizes like sand generally don't erode as easily. Each soil type has an "erosion factor" that indicates how likely it is to erode.
- Slope length: the longer the slope, the more likely it is to erode.
- Slope steepness: steep slopes are more erodible than relatively flat soils
- Cover: the better the soil is covered with grass, plants or plant leaves, or crop residues, the less likely it is to erode.
- Practices: when tillage activities (such as plowing or disking) are done on the contour (around the hill, not up and down it), runoff is slowed down, reducing erosion. Adding terraces, grass strips, stream buffers, grassed waterways, and other erosion control features will also reduce soil loss.

Of all these factors, the only two that farmers can control are cover and practices.

Protecting topsoil from erosion is simple in concept: keep it covered. Soil erodes most when it is bare and unprotected, usually after winter before the crop begins to grow. As crops grow, the plants put out leaves which act as mini-umbrellas, shielding the bare soil from the impact of raindrops. Farmers can protect bare soil by:

- Not tilling the soil before planting (called no-till) or conservation (minimum) tillage, in which the operator uses a piece of equipment that chisels through the soil and leaves a high percentage of the stalks and leaves on the surface.
- Putting the steepest, most erodible land in pastures or hay land, so that perennial grass or legumes like alfalfa continually cover the soil to prevent erosion.
- Planting cover crops (see photo) and disking them in or killing them with an herbicide in the spring at planting time.
- Planting grass strips in between crops or at the bottom of slopes to catch soil before it leaves the field.



Explain that it's crucial to protect the soil through the winter months, spring rains and until the crop grows enough leaves to protect the soil from raindrops. During spring rains is the most vulnerable time of year for bare soil to erode.

Demonstration

1. Discuss the erosion power of a single raindrop, while passing around the raindrop photo.

Like a mini-bomb, each raindrop strikes bare soil at the speed of 20 to 30 feet per second. The energy when it hits is enough to throw soil as high as two feet into the air

and five feet away from where it hits. The soil that's detached by the force of the raindrop now moves more easily in water – and may go from being an asset for growing plants to being a pollutant in water.

If you have a bare spot next to your house, you can see muddy spots along the foundation after a rain. Some spots near your house will still be clean. Where would you expect to find those areas?

Participants will likely answer, "Anywhere there is grass or mulch."

When the soil is dry, the rain first fills the spaces between soil particles, then it begins to detach the soil particles and carry them away. When the soil is wet or saturated, the raindrops can splash soil loose where it easily moves by gravity in flowing water.

Is there any way we can prevent the soil from being carried away? Grass and mulch work around a house. What about in a crop field?

Depending upon the audience and the land uses common in the area, they may come up with pasture, hay land, woodland. Some will know about crop residue, strip-cropping, grassed waterways, terraces, cover crops, stream or field buffers.

So basically if we want to stop erosion, we want to put an umbrella over the land. Let's explore that idea a little by seeing what happens when we make it rain on these three 'fields.' What happens when raindrops hit bare soil?

2. Invite everyone to gather around the demonstration where they can easily see. (Might keep them seated if there are more than 10 or 12 people, 15 maximum.)

a) Slowly pour about 1/3 of contents of the water can as evenly as possible over all 3 loaf pans, being careful to catch the water in the storage box. Slowly is the key. Give the water time to soak into the dry soil and begin to run off. The bare soil should run off first, although if you have a lot of mulch/residue on the middle pan, water may run off because it doesn't even reach the soil.

Compare no tillage or conservation tillage to the middle box with the mulch or residue.

b) Pour another third of the water can onto the loaf pans. Ask the audience to watch the runoff going into the small jars. **What color is it? Which pan causes the darkest color of soil in the water? Which one has the least soil in the runoff?** (Should be lightest with the grassed pan, darkest with the bare soil.)

This is a pretty simple concept – if you cover the soil with crop residue, grass or legumes, you protect it from erosion. But, with the high demand for our working lands to produce more and more food, fiber and fuel, some farm operators who seem to have forgotten this simple principle and you can see where some are taking out grassed waterways, field borders and stream buffers to get more acres to farm. Unfortunately, this leaves the soil unprotected and

vulnerable. You can see the resulting erosion in gullies, filled-in road ditches, and creeks where the water is colored with soil.

c) Slowly pour the last 1/3 of the water can over the soil. Take the ruler and measure the height of the raindrop splash on the three white paint sticks at the back of each pan. Compare the splash height.

Take another look at the runoff. Iowa has lost half of its topsoil. Just 150 years ago, Iowa's topsoil was 12 to 16 inches deep. Now it's six to eight inches deep. It takes 50 to 500 years to create one inch of topsoil, but we are losing soil at the rate of 5 to 15 tons per acre per year. Ten tons of soil per acre, although it sounds enormous, is almost impossible to see; from year to year, most of us won't notice the loss. As you look out over a crop field, 10 tons of loss is a layer only about the thickness of a dime. Easy to miss, but still a lot of eroded soil. **What happens when our topsoil is gone?**

Answers will vary; maybe costs will be higher. Inputs like fertilizer will be much higher. Crops will be more susceptible to damage because of drought or flooding, because the soil structure will be lost.

Midwestern soil has been called its "black gold." Can our state afford for the second half of our topsoil to disappear? Something I want everyone to think about the rest of the day is how can we protect this vital gift? How can we keep soil in its place? What can you do as a landowner to help that happen?

Then hand out the cocktail umbrellas as a reminder to take care of the soil.

Cleanup

Pour water from storage container and loaf pans onto a grassy area outdoors. Wipe up with paper or cloth towels. Empty water can. Empty soil back into garden or lawn, or dispose of at the site if there's a place where it won't look bad. All the supplies except the watering can should fit inside the storage container for transporting or storing.

Resources

Iowa State University

www.extension.iastate.edu/store/ListItems.aspx?CategoryID=93

Iowa Soil Quality Card PM 2027

Soil Erosion and Water Quality – Resource Conservation Practices PM 1901 E

USDA Natural Resource Conservation Service (NRCS)

Dirt: The Erosion of Civilizations. 2007. David R. Montgomery. University of California Press.

Dirt, soil, call it what you want--it's everywhere we go. It is the root of our existence, supporting our feet, our farms, our cities. This fascinating yet disquieting book finds, however, that we are running out of dirt, and it's no laughing matter. An engaging natural and cultural history of soil

Optimum group size: 10-15

Time: 2 hours for preparation, 1.5 to 2 hours for activity and discussion

Materials you will need (also included under each part)

Part A: Table, chairs, nametags, and quilt pieces (see Sub-activity 6)

Part B: Quilts or quilted items (or photos of them).

Part C: Aerial photograph of farm fields. Aerial photos are available from your local NRCS office. Ask them to provide an aerial photo on a scale that shows several townships in your area. A large, poster-size photo is ideal. However, any aerial photo that shows a variety of fields and land uses would be useful.

Part D: Lace tablecloth and heavy cotton or terry tablecloth.

Part E: Very coarsely crushed chocolate sandwich cookies (minus most of the frosting, so it mimics soil better) and powdered cocoa or hot chocolate mix; 5 pie tins; and samples of actual soil from: A: a continuous row crop field; B: a pasture; C: native prairie.

Part F: Heavy cotton or terry tablecloth; large beige or brown tablecloth; and a collection of 20 to 40 8x10 labeled photos of the following land uses (1-2 photos of each): row crop corn; row crop soybeans (or use your state's prevalent crops); conservation tillage; crop residue; corn planted on contour; CRP; rye cover crops in winter; rye cover crops in spring; rye and clover cover crops; stream with vegetation buffer; stream without vegetation buffer; pasture; grass waterway; alfalfa field; hay field on highly erodible land; woodlands; prairie; wetlands; soil erosion by wind filling ditch; soil erosion by wind on snow; soil erosion by water; gullies formed by soil erosion by water. (These labeled photos can be downloaded from the Pathfinders RC&D website: www.pathfindersrcd.org) and need to be printed on a color printer; a matching collection of 20-40 small pieces (at least 4 x 4 or 4 x 6) of quilting fabric. Each fabric piece should be matched up with one of the labeled photos. There are many fun ways to match fabric pieces with the photos. For example, a fabric with a "row" pattern could match up with the row crops. A fabric with a water pattern or blue color could match up with the wetland photos. A fabric with a tree pattern could match up with the woodland photos. If budget allows, there are many fabrics available with printed patterns of: corn, grass, trees, wetlands, cows on pasture, deer, ducks, wildflower meadows, hay bales, etc. You could also use "fat quarters" of fabric (18x22), fold them into smaller pieces for the activity, and later give them to the meeting participants as a memento for them to use in their own quilting or craft projects.

Part G: Ingredients for "dirt cup desserts" -- a clear plastic cup with two layers of pudding (vanilla and chocolate) topped with a crumbled chocolate sandwich cookie and a gummy worm on top to symbolize healthy soil; fact sheets on NRCS programs such as the Environmental Quality Incentive Program (EQIP), and on cover crops (see Resources section to download and print these fact sheets. It would be ideal to make a copy for each woman to take home to read more thoroughly and share with family members and tenants.) Idea for door prizes: Cover crop seed samples so that participants can experiment with cover crops in their vegetable or flower gardens before using them on the field-scale. You can wrap up hand-full sized seed samples in fabric pieces and tie them at the top with some string. Or put the samples in baggies and write

the seed type on the bag. Winter wheat, clover and rye are readily available at your local co-op or feed store.

Overall activity directions

This activity helps groups of women landowners to find the common threads of conservation goals for each of their farms. It provides a great forum for women landowners to share their goals, ideas, and interests as they support each other in their work to improve conservation on their farms for future generations.

The facilitator should seat all participants around a large central table. This table will be the center for all the activities. An additional side table or two will be needed to serve refreshments and display the soil examples and the quilt pieces that each group member will choose.

Sample introductory remarks: “When we are **sewing** a fabric quilt, we choose fabrics that provide the best weight, feel, color and pattern for that particular quilt. We spend a lot of time and energy to sew high-quality quilts that give our family members warmth and beauty for generations to come.

“Have you heard the saying, **fabric of the land**? When we look at Midwestern states from an airplane, our farms look a lot like quilts. Each field is a unique square in the fabric of our land. Making choices about our farmland is like choosing the patterns on the fabric of our quilts. Each year we decide what crop to plant or **sow** in each field: which fields will grow corn or beans or other crops; which fields will be in pasture; which fields will provide hay; and which fields are best suited for conservation practices. We ‘sow’ our farmland quilt much like we ‘sew’ our fabric quilts.”

Part A: Welcome to the table (5 minutes)

Materials needed: Table, chairs, nametags, and quilt pieces (see Sub-activity 5),

As they arrive, ask each woman to fill out a nametag and choose 1-3 (your choice based on group size) quilt pieces, which are displayed on the side table. Encourage them to take a seat at the table and look over their quilt pieces.

After everyone is seated, officially welcome the women to the table with an introduction like this: “The tables of our kitchens, dining rooms, workshops and local cafes are places where farming and conservation issues are discussed and decisions are made. Women are not always sitting at the table during those farming discussions. Today, this table is just for you: a table for women to discuss your farmland and conservation. This table will be a comfortable place to share stories and information with other women and ask any questions you would like to ask. The activities we do together today will be informal and conversational, much like sitting together at the kitchen table.”

Part B: Sharing our quilt stories (20 minutes)

Materials needed: Quilts or quilted items (or photos of them).

Ask each group member to introduce herself, and share a brief story about a quilt in their family – showing it, if they have brought it along. Each person could share who made the quilt, for what occasion it was made, and how long it has or may continue to be in their family. Many of our great-grandmothers' quilts were very warm, strong, and practical, made to last with excess scraps of material from sewing the family clothes. Often these quilts have stories related to the farms where the quilter lived. (For a related activity, see the Davis County Barn Quilts information on the resource list below). Try to limit each person to about 3 minutes maximum for these stories, since you will have several more activities that build on this one.

Part C: A view of our farmland quilts (10 minutes)

Materials needed: Aerial photograph of farm fields. Aerial photos are available from your local NRCS office. Ask them to provide an aerial photo on a scale that shows several townships in your area. A large, poster-size photo is ideal. However, any aerial photo that shows a variety of fields and land uses would be useful.

Show the aerial photo to the group. Point out how the squares of farm fields look like the squares of a quilt. Point to specific fields that have different crops and land uses such as: crop fields, pastures, woodlands, wetlands, etc.

Ask the women to discuss some of these land uses and their benefits. For example: the crop fields give us crops for profit and feed for livestock; the pastures provide grazing for livestock and reduce erosion, as the grass is a year-round cover; the woodlands provide wood for timber sales, firewood, and habitat for wildlife species that are hunted for food, as well as providing a natural space for retreat and respite; the wetlands provide habitat for wildlife and a serve as a sponge to soak up flood waters and excess nutrients from fertilizers applied to nearby fields. (Some of the other activities in this guide can give you more background information for this discussion.)

NOTE: At this time, you will ask each woman to go to the side table, pick up 3 fabric quilting pieces of her choice, and hold them in her lap for the next activity.

Part D: Setting the Table: Protecting our family foundations (10 minutes)

Materials needed: Lace tablecloth and heavy cotton or terry tablecloth.

Facilitator: "Our kitchen and dining room tables are one foundation of our family life. Often our tables are family heirlooms that have stood the test of time and have been the center of family life for many generations. Before we serve a family meal, we usually protect the wood of our tables with a tablecloth. After all, we want to keep the table in the same nice condition that it was in when given to us. We hope that our grandchildren will be able to sit around the same table with their grandchildren.

“We can think about our farmland in the same way. Our soils are the foundation of our farms. Healthy soil means healthy crops. We need to protect our soil much like our tables. We want to keep the soil healthy and in place so that our grandchildren’s grandchildren will have the same healthy soil that we had when we started farming this land.

“Wind and water erosion carries away a lot of soil each year. You can see soil blowing in dust storms in the fall; covering the snow in the road ditches in winter; and washing away in gullies during heavy spring rains.”

Place the lace tablecloth on the table and show the group how it protects a lot of the table, but leaves a lot of table exposed through the holes in the lace. This lace tablecloth is like crop residue after harvest. The pieces of stalks and leaves and roots keep some of the soil covered and protected from erosion, but much of the soil remains uncovered and bare and could be carried away by wind or water. Show the labeled photos of crop residue from Sub-activity 6 (one or more of the participants may have chosen these photos, so ask them to show the group.)

Remove the lace tablecloth and replace it with a heavy cotton or terrycloth tablecloth. Show the group how this type of tablecloth covers the table completely. No part of the table is exposed.

“This type of tablecloth is like growing a cover crop or keeping a field in pasture. Some of the most common cover crops planted on Midwestern farms are winter wheat, clover and rye. These cover crops are planted in the fall by aerial seeding after leaf drop before harvest, or right after harvest by seeders or drills. Cover crop plants hold the soil in its place all through the fall, winter and early spring, when soil is most vulnerable to erosion. Cover crops also suppress weeds; reduce nitrogen loss (and in the case of clover, produce nitrogen for the row crops to use); increase soil organic matter; and improve overall soil quality. In mid to late spring, the cover crops are either tilled under or sprayed with herbicide before planting the row crops.”

Part E: Getting our hands in the soil (5-minute introduction and 15-minute break time)

Materials needed

- very coarsely crushed chocolate sandwich cookies (minus most of the frosting, so it mimics soil better)
- powdered cocoa or hot chocolate mix
- 5 pie tins
- samples of actual soil from: A: a continuous row crop field; B: a pasture; C: native prairie.

Gather spade-full samples of soil from A, B, and C. Your local NRCS office may be able to help you with this. Keep samples moist in zip-loc bags and refrigerate to maintain quality.

Right before the meeting, set each A, B, and C sample in a pie tin and place a label of its soil type by each one.

Fill another pie tin half-full with crushed chocolate sandwich cookies (minus frosting) and place a label that says “Good Soil Structure” next to it. Good, healthy soil has many marble-sized pieces with air spaces, earthworms and organic matter (pieces of roots, leaves, etc.)

Fill the other pie tin half-full with powdered cocoa or hot chocolate mix and place a label that says “Poor Soil Structure” next to it. Poor, overworked soil has very tiny and fine pieces of soil, no air space, no earthworms and no organic matter.

As an introduction to break time, encourage each participant to stop by the display table during the break to get their hands on the soil examples. Ask the women to compare the crushed chocolate cookies and cocoa to be clear about what good and poor soil structure looks like. Then ask them to review each of the A, B, and C samples and rate them as good, ok, or poor soil structure (you can ask them to write down their rating next to each sample, or just make a mental note). This information will be useful in the discussions in Activities 6 and 7.

Part F: Piecing Our Quilt: Choosing conservation options (40 minutes)

Materials needed:

- heavy cotton or terry tablecloth
- large beige or brown tablecloth
- collection of 20 to 40 8x10 labeled photos of the following land uses (1-2 photos of each): row crop corn; row crop soybeans (or use your state’s prevalent crops); conservation tillage; crop residue; corn planted on contour; CRP; rye cover crops in winter; rye cover crops in spring; rye and clover cover crops; stream with vegetation buffer; stream without vegetation buffer; pasture; grass waterway; alfalfa field; hay field on highly erodible land; woodlands; prairie; wetlands; soil erosion by wind filling ditch; soil erosion by wind on snow; soil erosion by water; gullies formed by soil erosion by water. (These labeled photos can be downloaded from the Pathfinders RC&D website: www.pathfindersrcd.org) and need to be printed on a color printer
- corresponding collection of 20 to 40 small pieces (at least 4 x 4 or 4 x 6-inch) of quilting fabric. There are many fun ways to match fabric pieces with the photos. For example, a fabric with a “row” pattern could match up with the row crops. A fabric with a water pattern or blue color could match up with the wetland photos. A fabric with a tree pattern could match up with the woodland photos. If budget allows, there are many fabrics available with printed patterns of: corn, grass, trees, wetlands, cows on pasture, deer, ducks, wildflower meadows, hay bales, etc. You could also use “fat quarters” of fabric (18x22), fold them into smaller pieces for the activity, and later give them to the meeting participants as a memento for them to use in their own quilting or craft projects.



Pull the heavy cotton tablecloth that is currently on the table into a bunch, to form a “hill” in the middle of the table. Then place the large beige or brown tablecloth over the top of the hill. This gives you a large open landscape with a hill in the middle. You could think of this as the “backing” of your quilt, similar to the soil of your farmland.

Go around the table and ask each woman to briefly show the rest of the group her 3 quilt pieces and explain why she chose those pieces. Some participants may choose an erosion piece because they have a concern for that; some may choose the crops and practices of their farm currently; and some may choose conservation practices they are interested in learning more about and implementing on their land in the future.

Then each participant will place their quilt fabric pieces (that are matched with the photos) directly onto the landscape on the table. Encourage the participants to place those pieces in ways that would “sow” a farm quilt that will conserve healthy soil for future generations. For example, they can place row crop pieces to be planted on the contour (horizontal side) of the hill instead of plant vertically up and down the hillsides. They may decide to plant hillsides in pasture or prairie or enroll them in the CRP Program. They may decide to plant trees and restore wetlands. They may decide to plant cover crops with funding support through the EQUIP Program. This activity will be as unique as the group members and is a good way for the women to ask each other and the leader questions and share ideas.



Part G: Dirt cup dessert, discussion, and door prizes



Materials needed

Ingredients for “dirt cup desserts” (amounts will vary depending on group size)

- *clear plastic cup for each participant*
- *chocolate pudding*
- *crumbled chocolate sandwich cookies*
- *gummy worms*

How to assemble the dirt cup desserts: layer chocolate pudding into plastic cup, fill about 2/3 full; next, add layer of crumbled chocolate sandwich cookie, and add a gummy worm on top to symbolize healthy soil (see photo).

- fact sheets on NRCS programs such as the Environmental Quality Incentive Program (EQIP), and on cover crops (see Resources section to download and print these fact sheets. It would be ideal to make a copy for each woman to take home to read more thoroughly and share with family members and tenants.)

Idea for door prizes

Cover crop seed samples so that participants can experiment with cover crops in their vegetable or flower gardens before using them on the field-scale. You can wrap up handful-sized seed samples in fabric pieces and tie them at the top with some string, purchase miniature muslin “feed bags” at a craft store, or simply put the samples in plastic baggies and write the seed type on the bag. Winter wheat, clover and rye are readily available at your local farm co-op or feed store.

This activity is an open discussion time to enjoy the dessert, review concepts, ask and answer discussion questions, and give away door prizes.

Discussion questions

- How can you reduce soil erosion and improve soil quality on your farm?
- What are two kinds of cover crops commonly used on Midwestern farms; what are their benefits; when are they planted and when are they tilled or sprayed?
- How can NRCS and the EQIP program help you with your farming goals?

Resources

Pathfinders Resource Conservation and Development (RC&D):
Technical Assistance and labeled land use photos available for downloading and printing.
www.pathfindersrcd.org (641-472-6177)

NRCS Iowa

<http://www.ia.nrcs.usda.gov/>

EQIP (Environmental Quality Incentives Program)

<http://www.ia.nrcs.usda.gov/programs/stateeqip.html>

Cover crops

<http://www.ia.nrcs.usda.gov/news/successstories/Wells.html>
Green Cover Seed (Nebraska-based seed supplier)
www.greencoverseed.com.

Dirt cup dessert

http://kidscooking.about.com/od/desserts/r/dirt_dessert.htm

Davis County Barn Quilts

www.visitdaviscounty.com

Activity 5: Soil Structure Test

Created by Jean Eells, PhD, county soil commissioner and conservation educator

Keywords

soil, soil structure, erosion control, grassed waterways

Concept(s)

An understanding of soil structure (tilth) and the role of good soil structure in controlling erosion is a key to helping women farmland owners dialogue with their tenants about controlling erosion on their own farms.

Activity description

This activity provides participants with examples of various types of soil structure, explains the effect of tillage on soil structure, demonstrates that soil with good structure is less likely to erode, and introduces the concept of installing grassed waterways to reduce overall soil erosion.

Optimum group size: up to 25 (limited only by being able to see the jars on the table)

Time: 30 - 45 minutes to collect soil samples and prepare jars; 5-10 minutes for demonstration

Materials you will need

- 2 clear quart jars
- 2 rubber bands that fit snugly over the top of the jars
- 2 squares, about 5 inches square, of a large open mesh fabric, such as from purchased potato bags; fabric with ¼-inch openings is best for this activity
- fist-sized soil sample with poor soil structure
- fist-sized soil sample with good soil structure

A note on collecting the soil samples

Because you want an example of poor soil quality that really shows the most contrast with a good soil, go into a field near the field entrance to the end rows, where soil is most compacted. This provides the best comparison and contrast, and that's what's important about this activity. You are not showing one site with bad soil, but providing a benchmark against which landowners can make their own judgment about their own soils.

The sample of good soil structure can be obtained under any area of grass that has not been tilled, such as in a fencerow or yard. You don't need the big roots or grass plants, but you want the soil under the surface that shows how it holds together. This is the benchmark for the best soil structure in your area.

Both soil samples benefit from being dried, so collecting these ahead of time is helpful. Also the samples should be mostly in a clump or clod rather than completely loose, in order for the demonstration to work best.

Activity directions

The facilitator can introduce this activity by saying: "One of the characteristics of good soil quality is good soil structure. Soil structure can be thought of as the texture of the soil, which can be compared and judge like many textures used in cooking. Simply put, soil that has been pulverized has lost its structure and is closer to the texture of cocoa powder rather than the texture of coarse breadcrumbs, which is much better.

“One effect of soil that has been broken down into fine particles is that it is much more likely to erode by wind and water. Without fine roots like those of small grains, for example, the soil particles dissolve quickly into water. This demonstration activity focuses on how good soil texture holds soil together, even in saturated conditions whereas overworked soils dissolve into water rapidly and continue to do as long as the soil is in contact with water such as rain or snow melt.

“Evidence of declining soil structure is the annual formation of small gullies in fields where water has carried small soil particles away. While many of these gullies can be tilled away in the spring, they are important evidence that something is going wrong with the soil or with the residue cover. Over time, significant amounts of soil can be lost from a field even though each year it doesn’t look like much and the gullies seem to disappear once they are tilled through.”

Tips for the demonstration

Participants will be able to see the demonstration best if the jars are on a light colored surface and have a white or light colored surface such as a white box, piece of paper, or wall behind them. Do the demonstration as close to the participants as possible, and leave it where they can watch it for a period of time.

Clean-up: When the demonstration is over, you will need to empty jars that have water and some soil in them, so being able to dump them outdoors may be helpful.

Prepare jars for demonstration

Before the meeting, place mesh over the top of the jar and push it down into the top of the jar, forming a basket about an inch deep; put a rubber band over the top of the jar to hold the mesh in place. The goal is to have each basket about the same depth.

Then, fill each jar with water to within a half inch of the top, so the mesh baskets are in the water about a half-inch.

Demonstration

Ask participants to comment on what they observe about the two soil samples. Things to note about the poor soil sample are that the particles are very tightly packed together, with few roots or pieces of organic materials visible. Also this sample lacks pore spaces for air or water to penetrate.

Discuss the characteristics of the good soil structure sample. Observations should include the presence of fine roots holding the soil together, and other aspects of the soil that make it more porous; mention that it coheres into pea-sized pieces more frequently. (See photos.)

Break off approximately equal walnut-sized chunks of soil from each larger soil sample and carefully place one chunk into the net basket in each jar, without letting them fall apart. The size of the chunks should fit down into the opening of the jar and into the water.

The soil without good structure will start to dissolve right away, and will continue to rain down particles for the entire time of the demonstration. The soil with good structure may have a few large particles fall into the water, but overall will resist dissolving; the contrast will be quite visible.

Discussion points

Tillage breaks up soil structure, and fine roots, such as those from small grains or alfalfa, help rebuild it. Corn and soybean roots do not rebuild soil structure.

Poor soil structure in fields (not just in the end rows) leads to movement of soil in running water. This is becoming a greater problem on farms where small grains and pasture are not part of the crop rotation; soil erosion is visible in fields where it did not occur in years past. Grassed waterways may be used in fields to capture this moving soil before it washes into ditches and streams.

Small gullies in fields may seem insignificant, and they are hidden in the spring by tillage and during the growing season by crops. However, this is just like a cake with frosting. If someone sneaks into the kitchen and steals a finger-full of frosting, you can smooth the frosting in that spot – disguising it cosmetically – and if the person steals frosting again in the same spot you may still be able to hide the loss of the frosting. Eventually, though, so much frosting will be gone that you won't be able to hide it anymore. That's like the small gullies in



fields; if you can see small gullies during the fall after crops have been harvested before any tillage is done, or if you can see them in the spring before tillage, take notice and check the soil structure in your fields. You may need to install grassed waterways to catch the soil particles moving off the field, or consider other options for improving soil structure and soil quality. See Resources for information on other best management practices for controlling erosion that women can discuss with their tenants.

Activity 6: No-Till Benefits Below the Surface

Adapted by Jean Eells, PhD, county soil commissioner and conservation educator

Keywords

soil, tillage, no-till, soil structure, erosion control

Concepts

All forms of tillage disturb the soil and damage its structure. When soil loses structure, it comes to resemble flour rather than bread crumbs, and this fine structure makes it very susceptible to erosion from wind and water. No-till and minimum till are management options that can reduce damage to soil structure and help prevent erosion.

Activity description

This activity uses common household food items (cereals and milk) to demonstrate how the size of soil particles affects the soil's ability to resist erosion.

Optimum group size: 10 to 15

Time: 5 minutes for demonstration, 10 – 15 for discussion.

Preparation time: 15 minutes to gather materials and prepare cereal.

Activity time: 15 – 20 minutes

Materials you will need

- 1 box of cocoa or rice cereal with approximately pea-sized pieces
- 1 pint of milk
- 3 glass pint jars

Activity directions

Background information

No-till and a closely related variation called strip-till are terms to describe two ways farmers can protect and enrich their soils with leftover crop residues. With these tillage methods, new crops are planted without removing the parts of the plants left after the previous harvest. Farmers save fuel and labor by eliminating trips across the field for tillage. The most common objections are that no-till fields look messy or trashy to people who grew up with smooth bare soil in the fields as the standard of good farming; and that in areas where soils stay wet and cool longer in the spring, the farmer has to wait extra days for the soil to dry and warm. Strip-till is a modification of no-till that clears residues from a narrow strip of soil in the row where the seed is planted and the soil in that strip warms more quickly to help seeds germinate and grow.

Benefits of no-till and strip till on the surface of the ground are easy to understand if you think about how the crop plant parts that are not harvested are like a blanket on the soil. The crop residues protect the surface of the soil from raindrop impacts that dislodge soil, which then can be carried off the field with rain that isn't absorbed. Residue also protects the soil surface from wind, which can also dislodge particles of soil that bounce along and dislodge still more soil particles and moves off the field.

Soil below the surface benefits from no-till by developing pore spaces from decayed root channels and earthworm activity. The pore spaces allow water to soak into the soil rather than run off, and also allow the exchange of oxygen and other soil gases. Just like your lungs breathe and exchange oxygen, the soil breathes, too. Pore spaces allow air to escape while water fills the pores and goes down into the soil.

All tillage – including conservation tillage – interrupts the pore spaces by breaking them up, and allowing them to get filled in with fractured particles of soil. Air exchange is impaired and water stays on the surface and carries soil with it when it runs downhill. Tillage also breaks apart soil particles into very small pieces that resemble flour more than coarse breadcrumbs, and a predominance of flour-like soil slows water absorption. Corn and soybean roots do not rebuild soil structure very quickly, and fine, flour-like soil particles do not regain a breadcrumb texture. Small grains and legumes have fine root systems that can rebuild soil structure more quickly.

Demonstration

1. Prepare cereal by taking 1/3 to 1/2 of the box and crushing it fine. This can be done by placing the cereal in a plastic bag and rolling it with a rolling pin or pounding it with a hammer, flat mallet, or smooth side of a meat cleaver. The plastic bag may become full of small holes from the crushing, so transfer the fine cereal to another bag or carrying container for the demonstration. Keep the uncrushed cereal separate from the crushed cereal. Jars may be prepared with cereal ahead of time or prepared in front of the group as you describe what each jar represents.

2. Introduce the basic principles of no-till and strip-till at the surface (see Background information, above) and explain that another benefit of limited tillage is better water infiltration and better air exchange. Pour each of the three jars half-full with whole cereal.

3. Leave one jar with only whole cereal, and explain that this is similar to **no-till**, where the soil structure has many pore spaces that develop as roots decay from the previous year's crops, and earthworms can create channels that are undisturbed by tillage.

4. To the second jar, add enough of the crushed cereal to partially cover the top, but leave some openings in the whole cereal visible from the top. Explain that this is similar to **conservation tillage**, which leaves some residue on the top but rips through the upper layers of soil each year.



5. To the third jar, add enough of the crushed cereal to completely cover the surface of the whole cereal in a layer about a half-inch thick. This is similar to soil that is **plowed and disked** each year, which breaks down the pore spaces and pulverizes the soil.

6. Pour milk into the first jar (no-till) and explain that this is how easily rain can move down into the soil without carrying soil away in runoff water.

7. Pour milk into the second jar (conservation tillage); the milk will flow into the whole cereal below slightly more slowly. Some of the powder will be carried into the whole cereal, showing how the fine soil particles are moved into the pores below.

8. Pour milk into the third jar (plowing and disking). The layer of powder will stop the milk from flowing into the cereal below, demonstrating how soil that's been pulverized from tillage impedes the exchange of air and water; the air can't get out past the powder, so the water can't get in. Water on the surface flows with gravity, creating erosion where it may not have occurred historically, making small gullies in fields. Consider whether pulverized soils also contribute to ponding in some areas where ponds may drain more slowly.

Discussion questions

What benefits of no-till or strip-till do you think are the most important in your area? There are many additional benefits that were not mentioned in the activity.

What objections you've heard to no-till or strip-till do you think are important? How would you respond to them, based on what we've talked about today?

Resources

***Building Soils for Better Crops*, SARE book, 294 pp., free PDF download**

<http://www.sare.org/Learning-Center/Books/Building-Soils-for-Better-Crops-3rd-Edition>

Activity 7: Picturing Our Connections to the Land

Created by Detra Dettman, Executive Director, Pathfinders Resource Conservation and Development (Fairfield, IA)

Keywords

personal connections, landscape planning, legacy

Concepts

Women landowners frequently say that they keep their family farmland for reasons other than economic ones—particularly for sentimental and legacy reasons. They love their land, and want to take good care of it. They want to leave it healthy, and make sure it passes to someone who will love and care for it as they have.

Activity description

The purpose of this activity is to demonstrate how conservation practices can create personal connections to the landscape, and how land management choices can foster or inhibit a person's connection to the land. The facilitator shares a story and personal photos that can generate discussion among audience members.

Optimum group size: 5 - 20

Group size should be small enough so the group is able to see the photos you have, or you can scan photos to be projected onto a screen for a much larger group. Larger numbers of participants may break into small groups to share their observations with each other after the leader models the discussion.

Preparation time: 15 - 30 minutes to gather photos and time to sketch out thoughts of what you will say about your connections to the land.

Activity time: 10 - 15 minutes

Materials you will need

- Personal photos of the facilitator, showing connection to a particular farm (e.g., outdoor wedding photo from home farm, children in a prairie, tree planting, or pond that you may have established, etc.

Activity directions

Share with the group a story about your strong connections to the land resulting from an experience you have had with it.

Here are some examples of stories that might be told:

I grew up on a diversified farm in northeast Iowa, where we had a dairy, raised hogs, and grew oats, hay and corn in rotation. Since it's hilly there, we had small farm fields (to this day my Dad still uses a four-ow corn planter). Some of the fields were bordered by oak trees. In addition, the creeks on our farm were lined with limestone outcroppings and oak timber.

I grew up so strongly connected to the land that I chose to celebrate one of the biggest occasions of my life on that land—my wedding. (Show photo) I chose to be married here in this section of land called “the 80,” where the access road traveled back a half-mile off the gravel road and traversed between farm fields, the creek and oak trees. The specific location was by a limestone outcropping overlooking the creek where I would go as child and teenager when I needed time alone and time to think. My husband and I both have a love for the outdoors, so it seemed to be the perfect place to get married.



Now, I wonder how things would have been different for me if I was raised on land that was all row crop and no trees, no creeks, no habitat for wildlife. I suspect I would have not have had a “connection” if there were no wild places for me to roam.

The choices we make for our land impact the experiences our children or grandchildren have. My husband and I have only had small parcels of land to work with, but we have done our best to create wild places on them to give our families the experience of being in nature.

Our first home comes with 5 acres. We immediately planted a windbreak to have more trees on the property, and also converted a 3-acre soybean field to tallgrass prairie (show photo). When we moved to where we are now, our home came with 10 acres. Again we planted windbreak and converted about 5 acres of scrubby pasture to tallgrass prairie. We also built a pond in a place where we had a large ravine opening up. The trees, prairie and pond have given us beautiful things to look, wild places to enjoy and much more wildlife to view and hear compared to what was there when we moved there.

Concepts to review with the group after demonstration/activity

- Our choices in how we manage our land affect how people experience the land
- We can create lasting impact on large or small parcels of land

Participants respond to the following questions:

- How do you envision people (family, neighborhood, community) experiencing your land in the future?
- How have your management decisions gone toward or away from the vision you have for your land?

The facilitator then follows the conversation with suggestions for resources the women can use to begin moving closer to their visions for their land.

Resources

Sustainable Agriculture Land Tenure (SALT) website – Drake University Agricultural Law Center.

<http://sustainableaglandtenure.com/>

The Landowners' Guide to Sustainable Farm Leasing (online booklet)

<http://sustainablefarmlease.org/the-landowners-guide-to-sustainable-farm-leases/>

- Chapter 3: Talking to the Tenant
<http://sustainableaglandtenure.com/2010/08/talking-to-the-tenant/>
- “Determining priorities and exploring possibilities” page:
<http://sustainablefarmlease.org/determining-priorities-and-exploring-options/>

Whole Farm Decisions page, Iowa State University Extension's Ag Decision Maker website

<http://www.extension.iastate.edu/agdm/wdfirst.html>

ISU Beginning Farmer Center (or other land link programs)

<http://www.extension.iastate.edu/bfc/>

Activity 8: Edible Aquifer: Illustrating groundwater contamination

Adapted by Julie Sievers, Environmental Specialist, Iowa Department of Natural Resources

Keywords

Groundwater, soil structure, contamination

Concept(s)

Human activities such as agriculture have an impact on groundwater and the aquifer. Groundwater supplies all of the water for private drinking water wells, for livestock water, and for irrigation in the Midwest. Wells are drilled through soil and rock into groundwater aquifers to supply this water. Groundwater can become contaminated by improper use or disposal of chemicals such as fertilizers and household cleaners. Depending on the geology and depth of the wells, these chemicals can move down through the soil, sands, and gravel and into the groundwater, where it can cause health problems for people, livestock and wildlife.

Activity description

This activity is to demonstrate the general concept of groundwater contamination using common household items, and foster discussion of ways to prevent groundwater contamination through good agricultural management practices.

Optimum group size: 10 - 25

Preparation time:

30 – 60 minutes to gather or purchase materials and prepare demonstration; if you decide to prepare the cups ahead of time, add prep time accordingly. Each participant should have a cup, so the more participants, the longer the prep time.

Activity time: 15 minutes or longer, depending on discussion

Materials you will need*

- Clear drinking cups (12 oz or larger), one per participant
- Crushed ice
- Clear soda pop (cold)
- Chocolate chips
- Butterscotch chips
- Crushed graham crackers
- Drinking straws
- Red powdered drink mix or gelatin mix (e.g., Kool-Aid™ or Jell-O™)

*Note: The amount of materials will depend upon the number of participants at the meeting.

Activity directions

Prepare the cups as follows immediately before using; if prepared ahead of time, place in freezer. Prepare one cup for each participant. Alternatively, ask participants to construct their own aquifers as you demonstrate building your own. Provide enough containers full of materials for each participant to easily reach them on the table.

Construct your “aquifers”

- 1 Construct each aquifer by filling a clear plastic cup half full with crushed ice. This represents the **gravels** that hold groundwater.

- 2 Add enough soda to just cover the ice. The soda represents **groundwater**.
- 3 Add a layer of chocolate and/or butterscotch chips on top of the ice. Vary the thickness of the chip layer and amount of each. This represents the **sand, gravels, and clays**. The differences in the amount and kinds of chips represent the differences in soils.
- 4 Add a layer of graham cracker crumbs to represent the **topsoil**.
- 5 Sprinkle small amount of the drink mix or gelatin powder to the top of the graham cracker crumbs. This represents **contamination** from agricultural or household chemicals.

Demonstration



- 1 Distribute one cup to each participant along with a drinking straw (or just pass out straws, if participants have built their own aquifers)
- 2 Using the straw, drill a “well” into the center of your aquifer. Do this by forcing the straw into the middle and to the bottom of each cup.
- 3 Slowly begin to “pump the well” by sucking on the straw. Watch the decline in the water table (the level of soda in the ice layer).
- 4 Watch as the red powder (contamination) gets sucked into the well area and eventually enters the groundwater.
- 5 Recharge your aquifer by slowly adding more soda, which represents a rain shower or snow melt.

Possible discussion questions

1. What observations/results surprised you? What did not?
2. How did results compare among different aquifers? (Observe the differences between the cups and how the results varied with the differences in layers, the rate that the liquid was pulled out, and the amount of “rainfall,” etc.)
3. What parts of the activity were most or least like what might happen with a real aquifer? Why?
4. What happens if all of the water is pumped out of an aquifer? Where does more groundwater come from? How long do you think it would take? Is there always more ground water, or could we run out?
5. Do you think a contaminated aquifer can be cleaned? If so, how?
6. How can we protect ground water (keep it clean)? (For these last questions, make use of materials in the Resources section, below.)

Note: You will need to have a plan for appropriately disposing of leftovers, which generally include liquid and ice and chocolate and butterscotch chips.

Activity 9: Your Quality-of-Life Values and Your Land

Created by Jean Eells, PhD, soil commissioner and conservation educator

Keywords

values, goals, whole-farm planning, transition

Concepts

Women farmland owners often mention how difficult it is to discuss their hopes and goals for their farmland with family members and – especially – with tenants. This social and cultural component of farmland ownership and management are rarely addressed in conservation education, but are important factors to consider and express. Identifying the values that define our quality of life goals can make our behaviors and the behaviors of others involved with the land much more transparent, and help us reach our goals more effectively and with a minimum of conflict.

Activity description

This activity leads participants through a mapping exercise, asking them to diagram the various (and sometimes competing) values that their land holds for them. This and the resulting discussion will help the women landowners evaluate management and transition options – and talk about them with family members and tenants – from a more informed and confident position.

Optimum group size: 10 - 20

Preparation time: 10 – 15 minutes to gather or purchase materials, time to create your own diagram to use as an example, if you wish.

Activity time: 15 – 30 minutes, depending upon group size and discussion time.

Materials you will need

- Provide one sheet of paper (at least 8.5 x 11”; larger is nice) per participant
- Markers or crayons enough for each participant to have at least one and share colors with others.

Note: You may want to create your own diagram to show participants as an example, or bring a sample from a prior meeting.

Activity directions

Background for facilitator

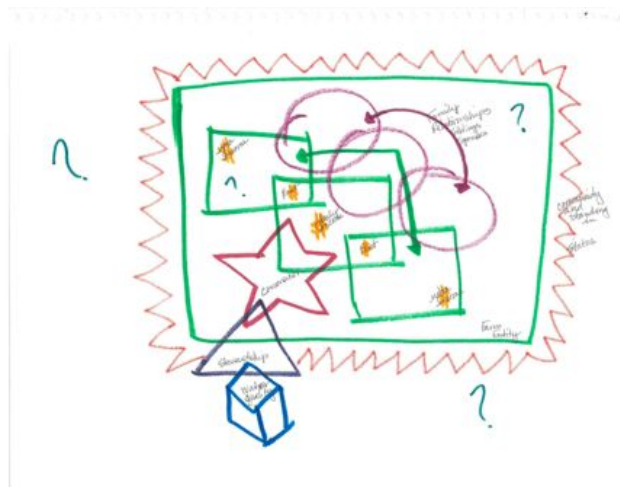
Tensions arise when people are unclear about their own values, which may be – or may feel like – they are in conflict with what others want based upon values that may be equally undefined or unclear. Discussions of what is to happen to our farmland in the future depend upon more than economic valuations. It seems that the only acceptable way to talk about land is based upon economics, and this dominance can be stifling to the many other values that can motivate our behaviors and inform our decision-making. When we examine the values that we hold about our land, and weigh our management and transition options from a clearer perspective, we are much more likely to achieve our goals.

Process

Introduce the concept of **quality-of-life values**. These are values or ideas about what outcomes and conditions you find acceptable or unacceptable in various areas of your life. These include what you want from relationships with people, how you want to live (lifestyle), how you see yourself in your community, what's important to you about how the land is treated, and who you want to see in charge of your farmland some day. You may be thinking of the future of your community's lifestyle and land uses. You may already be making a mental list of the things or people that are important to you.

If you have made an example map to share with the group, show it now, and share one or two items that help explain how you approached the task. You could also share diagrams made by women in prior meetings (with their permission) and briefly discuss them.

Distribute the paper and markers or crayons, and ask participants spend 5 to 10 minutes constructing a diagram or map (see illustration) that includes all the aspects of their quality-of-life goals. They might start with a circle or box representing their land in the center of the page, and draw lines to other boxes, showing the relationships and values that are important in their



to

decisions. Participants don't have to identify or share anything that is too personal or private, and they aren't required to discuss anything on the diagram that they don't want to. The map or diagram is simply a device to stimulate and organize their thoughts about their values.

Encourage participants to work silently for the first few minutes; after that, they may share with their neighbors as they work, if they like.

When everyone is finished, the facilitator may lead participants through a discussion using these questions:

Questions

1. Did the process of drawing out the relationships between ideas and people help you think of something new?
2. Did the drawing help you depict something about a relationship that has been a problem in some way (even very minor)?
3. What are some ideas you have about new ways to approach managing your farmland? What resources (people and materials) are available to help you? (See Resources, below.)

Resources

Sustainable Agriculture Land Tenure (SALT) website – Drake University Agricultural Law Center.

<http://sustainableaglandtenure.com/>

The Landowners' Guide to Sustainable Farm Leasing (online booklet)

<http://sustainablefarmlease.org/the-landowners-guide-to-sustainable-farm-leases/>

- Chapter 3: Talking to the Tenant
<http://sustainableaglandtenure.com/2010/08/talking-to-the-tenant/>
- “Determining priorities and exploring possibilities” page:
<http://sustainablefarmlease.org/determining-priorities-and-exploring-options/>

Whole Farm Decisions page, Iowa State University Extension’s Ag Decision Maker website

<http://www.extension.iastate.edu/agdm/wdfirst.html>

ISU Beginning Farmer Center (or other land link programs)

<http://www.extension.iastate.edu/bfc/>

Appendices

Sample news release for media

NEWS RELEASE



FOR IMMEDIATE RELEASE – April 12, 2011

Contacts: Lynn Heuss, 515-201-9405, lheuss@gmail.com
Leigh Adcock, 515-468-2477, lraigh@wfan.org

WOMEN FARMLAND OWNERS IN GREENE COUNTY AREA INVITED TO FREE PROGRAM FOCUSED ON CONSERVATION MAY 18 IN JEFFERSON

JEFFERSON—Women who own or manage farmland in Greene and neighboring counties are invited to participate in a free conservation discussion and field tour on Wednesday, May 18, from 8:30 a.m. to 3 p.m. at the restored Milwaukee Road Depot, 507 E. Lincoln Way, Jefferson. The program is called *Women Caring for the Land*, and will be facilitated by Chris Henning, local farmland owner and soil commissioner, who will share resources available such as USDA cost-share programs, state loans, and other tools.

Women own or co-own 47% of Iowa's farmland, and often express strong conservation values in meetings and surveys. However, many are unsure of exactly how to reach their conservation goals and what resources are available to help them. *Women Caring for the Land* offers a peer-to-peer, informal discussion format to allow women landowners to talk about their individual land stewardship goals.

All interested women are welcome, including owners, operators and inheritors of farmland, regardless of their degree of knowledge about conservation. A free lunch will be provided. In order for us to get an accurate meal count, please RSVP by Monday, May 16, by calling Lynn Heuss at 515-201-9405 or emailing her at lheuss@gmail.com.

The meeting begins with registration and coffee at 8:30 a.m. Conservation topics will be chosen by participants, and may include cover crops, pasture management, leases, and more. After lunch, participants will take a field tour that will include a local farm with a wind turbine on site. The meeting will end with a wrap-up and dessert around 3 p.m. at the Depot.

This session of *Women Caring for the Land* is sponsored by Women, Food and Agriculture Network in partnership with the Greene County Soil and Water Conservation District, USDA Natural Resources Conservation Service, Iowa Department of Agriculture and Land Stewardship - Division of Soil Conservation, and the Greene Co. Farm Service Agency. The series is funded by a grant from the USDA's North Central Region Sustainable Agriculture Research and Education (SARE) program, with funding support for this session from Home State Bank of Iowa, Jefferson branch.

Learn more about WFAN on the web: www.wfan.org.

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Sample landowner invitation letter



August 26, 2011

Dear (Merge First Name):

Women who own or manage farmland in Polk and Jasper counties are invited to participate in a free conservation discussion and field tour on Sept. 21 near Maxwell. The program is called *Women Caring for the Land*.

The meeting is set for Wednesday, Sept. 21, beginning at 9 a.m. at the Chichaqua Longhouse, 8600 NE 126th Ave., Maxwell (see back for map). A free lunch will be provided, and an optional afternoon field tour will allow participants to view farmland conservation practices in the area. The program will end back at the Longhouse with wrap-up and ice cream at 3 p.m.

Nearly half the farmland in Iowa is currently owned or co-owned by women. More women now own their farmland on their own, as they inherit it from their spouses. Many women wonder whether their tenant is doing all he can to improve soil and water quality on the land, and many are unsure of exactly how to reach their conservation goals and what resources are available to help them. *Women Caring for the Land* offers a peer-to-peer, informal discussion format to allow women landowners to talk about their individual land stewardship goals, facilitated by women conservationists who can share resources available such as USDA cost-share programs, state loans, and other tools.

In order for us to have the right amount of food available, please RSVP by 5 p.m. Monday, Sept. 19 to Lynn Hexas, WFAN program coordinator, by emailing her at lhexar@gmail.com, or calling (515) 201-9405.

This session of *Women Caring for the Land* is sponsored by Women, Food and Agriculture Network in partnership with Polk Soil and Water Conservation District and NRCS, and with support from Jasper SWCD and Polk County Conservation. The program is funded by a grant from NCR-SARE.

Sincerely,

Leigh Adcock
Executive Director, WFAN

Paul Miller
District Conservationist

Sample WCL meeting agenda

- 8:30 a.m. Coffee and sign-in
- 9 a.m. Welcome, brief introduction of facilitator(s), expectations for the meeting
- 9:15 a.m. Learning circle discussion; each participant will have about 5 -10 minutes (depending on the number of participants) to introduce herself and give a brief description of her land and her conservation goals and challenges
- 10:15 a.m. Break
- 10:30 a.m. Conservation activity/conversation starter (see activities to follow in this manual), more in-depth discussion of top two or three topics mentioned during the morning circle
- 11:15 a.m. Review of resource materials available related to those topics and others that may come up
- 11:30 a.m. Lunch is provided.
- 12:15 p.m. Clean up, load bus for conservation sites nearby
- 12:30 p.m. Guided conservation field tour (generally led by an agency staffer familiar with the area, and conducted in a rented van or bus)
- 2 p.m. Return to meeting location, brief break, offer dessert (optional)
- 2:30 p.m. Discussion recap, share handouts, fill out evaluation forms
- 3 p.m. Meeting ends

Additional resources for conservation demonstration activities

Soil Erosion resources

Losing Ground [interactive report](#) of soil loss in Iowa, released by the Environmental Working Group, spring 2011

<http://www.ewg.org/losingground/>

[Losing Ground](#) 5-minute video overview

<http://www.youtube.com/watch?v=ehIUKkw69Dg>

Water Quality resources

A Citizen's Guide to Ground Water Protection (U.S. EPA Web site)

<http://www.epa.gov/safewater/protect/citguid.pdf>

The Groundwater Foundation: Get informed

<http://www.groundwater.org/gi/gi.html>

Conservation Lease resources

[A Landowner's Guide to Sustainable Farm Leases](#)

<http://sustainablefarmlease.org/>

Resources for Activity 1: *Women, Wildflowers and Wildlife*

Web Resources

Ion Exchange

<http://ionxchange.com/vendors/ion-exchange-inc>

Ion Exchange, Inc. is a Native Wildflower and Prairie Grass Nursery located in Northeast, Iowa, since 1988. We grow premium wildflowers and grasses for prairies, wetlands, and savannas. We sell to architects, landscape designers, homeowners in both rural and urban areas. Please feel free to contact us with any questions relating to your native perennial needs or join our Earthy-Talk social network (similar to Facebook).

Iowa Department of Natural Resources

<http://www.iowadnr.gov/forestry/index.html>

A significant source of information about managing private forested and prairie landscapes. Technical services to the landowner including timber stand improvement, wildlife habitat restoration and Conservation Reserve Programs with cost/share potential. Their web site also has links to the Forestry Bureau's Prescribed Fire program.

Iowa Native Plant Society

<http://www.public.iastate.edu/~herbarium/inps/index.php>

The Iowa Native Plant Society is a forum for plant enthusiasts, gardeners, and professional botanists to exchange ideas and information, and to work together to: encourage conservation and ethical use of Iowa's plants; promote education about Iowa's plants, their habitats and cultural habits, and the preservation of these plants and their environment; appreciate and enjoy Iowa's native flora

Iowa Prairie Network

<http://www.iowaprairienetwork.org/>

The Iowa Prairie Network is a grass-roots, volunteer, non-profit, organization that is dedicated to the preservation of Iowa's prairie heritage. IPN was formed in 1990 by Iowans concerned that our prairie heritage was disappearing. People needed an organization that would bring those that know about prairie together with those that wanted to learn, to form a network of advocacy for Iowa's natural heritage.

University of Northern Iowa – Prairie Center

www.plantiowanatives.com

Plant Iowa Natives can help you find the information, resources, and service providers to make it happen. From backyard landscaping to landowner habitat restoration programs, it's a great place to start. Links to information about native plants, sources for seeds and plants, tips on landscaping, and incentive programs for landowners. Also links to educational resources and organizations. Perhaps best of all, find professional service providers for everything from site preparation, installation and management, including prescribed (Rx) fire! Check it out.

Prairie Moon Nursery

<http://www.prairiemoon.com/>

Prairie Moon Nursery began as a joint endeavor with members of a community land cooperative , which was organized in 1976, rooted in the collective land stewardship, social justice and consensual decision – making. Since their very first plantings, Prairie Moon continues to grow the ecotypes collected by the original members as well as a wide range of ecotypes from the Upper Midwest. Prairie Moon Nursery is dedicated to a tradition of learning, quality service, teaching and spirited dedication to native ecology. For information on plants, seedlings, seed, seed mixes, books and other products, please visit the web site.

Timberhill

<http://www.timberhilloaksavanna.com/blog/>

Sibylla and Bill Brown have spent nearly two decades restoring an Oak Savanna in Decatur County. The diversity of plants and wildlife is significant. In the spring, the Brown's enjoy an array of rare wildflowers – including Yellow Lady's Slippers. You can enter their blog with the link above. If you join the Native Plant Society, you'll receive all of Sibylla's posts – including wonderful pictures of the savanna and the opportunity to follow along with Sibylla's research on the interesting and diverse members of this burgeoning land community.

Books

Clemants, Steven and Carol Gracie. (2006). "Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States". Oxford University Press, New York.

Helzer, Chris. (2010). "The Ecology and Management of Prairies in the Central United States. University of Iowa Press. Iowa City.

Kurtz, Carl. (2001). "A Practical Guide to Prairie Reconstruction". University of Iowa Press, Iowa City, IA

Ladd, Doug. (1995). "Tallgrass Prairie Wildflowers". Globe Pequot Press. Helena, Montana.

Runkel, Sylvan & Dean Roosa. (2009). "Wildflowers of the Tallgrass Prairie : The Upper Midwest", 2nd Edition. University of Iowa Press, Iowa City, IA

Runkel, Sylvan & Alvin Bull. (1979). "Wildflowers of Iowa Woodlands". University of Iowa Press. Iowa City, IA

Shirley, Shirley (1994). "Restoring the Tallgrass Prairie: An Illustrated Manual for Iowa and the Upper Midwest". University of Iowa Press, Iowa City, IA

Smith, Daryl & Dave Williams, Greg Houseal, Kurt Henderson. (2010). "The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest". University of Iowa Press. Iowa City.

Stevens, William. (1995). "Miracle Under the Oaks: the Revival of Nature in America. Pocket Books. New York.

Tallamy, Douglas. (2007). "Bringing Nature Home". Timber Press. Portland, OR

Williams. Dave. (2010). "The Tallgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest". University of Iowa Press, Iowa City.