

# Native Seed: A Landowner's Perspective

The state of Iowa is roughly 97% privately owned. Landowners implementing conservation practices, like native prairie habitat, are a major driver of the market for native seed in Iowa.

On July 16, 2021, the Tallgrass Prairie Center (TPC) at the University of Northern Iowa hosted an online panel of Iowa landowners to discuss their experiences in planning and planting for conservation. We will look for ways to improve the process and increase the success of native seedings by connecting landowners with resources they need.

The TPC Plant Materials Program is funded by Iowa's Living Roadway Trust Fund and the University of Northern Iowa. We are grateful for collaboration with the Xerces Society and Green Iowa AmeriCorps in planning and hosting this online event.

**A list of funding sources and partner organizations used by our panelists, advice from the panel on planting and managing prairie, and identified needs for improvement are found in list items 4, 5, and 6, following the discussion summary.**

## 1 INTRODUCTIONS

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Introduction to the TPC Plant Materials Program and objectives of this meeting by Laura Walter, Plant Materials Program Manager and facilitator of the panel discussion

Co-moderator - Sarah Nizzi, Xerces Society, NRCS Partner Biologist and Farm Bill Pollinator Conservation Planner

Technical support from Anne Phillips, TPC Community Engagement Coordinator and Andy Olson, AmeriCorps Communications Associate

Goals of the meeting:

- Provide a forum for landowners to share experiences of obtaining and using native seed in conservation
- Help other stakeholders understand the landowners' perspectives
- Gather suggestions for improving these processes

## 2 PANELIST SELF-INTRODUCTIONS

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### 2.1 RUTH RABINOWITZ, OXBOW FARMS

- Oxbow Farms is five farms, four in Iowa and one in South Dakota
- Recently moved to Iowa from California and built a house here

- Walks the land, notes places where conservation practices are needed; emphasizes importance of being physically present on land, taking pictures, using drone photography to check less accessible areas
- Works with Climate Land Leaders, NRCS, Ducks Unlimited to test soil characteristics and plan management
- Finds it gratifying to see diversity of insects and birds in pollinator plantings on areas that were previously in brome or row crops

## 2.2 DAVE SCHMIDT, TROUBLESOME CREEK CATTLE

- Grew up in Cedar Falls, but lives in Audubon County, south of Exira
- In-laws have CRP on adjacent land; interested in keeping it in prairie after the contract expires
- Dave and his wife manage a cow-calf operation that produces grass-fed beef
- Seeded part of land to native tallgrass species as part of grazing rotation
- Interested in getting financial benefit from the native plantings as well as conservation goals

## 2.3 MAGGIE MCQUOWN AND STEVEN TURMAN

- Farm near Red Oak in southwest Iowa
- Family has owned the “Pleasant Prospect” farm since 1899, started using conservation practices in the 1920s, added first native prairie plot in 2004, joined ISU STRIPS program in 2014, and use cover crops in row cropped areas
- Maggie inherited the farm in 2011 and renamed it “Resilient Farms” in recognition of the environmental pressures on the land with climate disruption
- Goal is to replace introduced brome and reed canary grass with native plantings, including terraces, waterways, and edges of erosion basin
- Planted 7 grasses, 25 forbs in prairie STRIPS, seeded using Pheasants Forever Montgomery County seed drill
- Site preparation challenging due to buried fencing, rock piles, and noxious perennial weeds (Canada thistle)
- Utilize burning for prairie STRIPS management
- Gratified to see wild roses, butterflies, and bees returning

## 2.4 ALLIE RATH, SENIOR FARM BILL BIOLOGIST, PHEASANTS FOREVER AND QUAIL FOREVER

- There are about eight similar positions around the state, each covering 3-4 counties
- Works directly with NRCS on Conservation Reserve Program and other federal programs that are available to private landowners
- Works one on one with private landowners to help create and enhance wildlife habitat on their farms
- Helps landowners find programs that provide financial assistance for conservation
- Provides technical assistance through the process

## 2.5 KEVIN ANDERSEN, PRIVATE LANDS WILDLIFE BIOLOGIST, IOWA DNR

- Works in 24 counties in southeast Iowa; 22 years’ experience

- Works with private landowners who are conservation partners with the Farm Service Agency, Natural Resources Conservation Service, County Conservation Boards, Pheasants Forever, and others
- Helps train NRCS staff
- Helps private landowners with writing wildlife plans, burn plans, and conservation plans

### 3 DISCUSSION SUMMARY

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#### 3.1 WHAT INITIALLY GOT YOU INTERESTED IN CONSERVATION PRACTICES THAT USE NATIVE SEED?

Ruth

- Familiarity with CRP due to father's long-term participation in the program
- Awareness that Iowa is the most changed landscape in the country, and understanding of the Native peoples, bison, and prairie that were here
- Realizing that there were nonprofits (Xerces, Pheasants Forever, Environmental Defense Fund, Trees Forever) that want to collaborate with NRCS and landowners to help restore roots into the ground, get away from monoculture, and restore wildlife habitat

Steve and Maggie

- Death of Maggie's mother forced them to make decisions about the future of the family's farms
- Awareness of climate change, other kinds of pollution, and resource depletion convinced them to move back to the farm and make it sustainable
- Engaged in learning about invasive species, monoculture, crop rotations, and soil health
- Moved back (from Texas) and recognized how much the farm had changed in 40 years away, with different weeds, poor management of field borders, and loss of wildlife
- Inspired by experiences in Texas, including the influence of the Lady Bird Johnson Wildflower Center

Dave

- During last year at ISU, had extra time to take forestry classes, and was introduced to the idea that Iowa was not always corn and soybeans, that it had a natural ecosystem that was nearly gone and "really cool"
- Inspired by a visit to Neal Smith National Wildlife Refuge
- Opportunity to come back to Iowa in 2010 after being a Forest Service wildfire ecologist in California
- Had always wanted to farm, wants to integrate prairie and conservation while making a living at it

#### 3.2 WHAT ARE YOUR CONSERVATION GOALS? IF YOU HAD TO RANK THEM, WHAT WOULD COME FIRST?

Dave

- Main conservation goal is to maintain the soil and improve soil quality with the primary metric being soil organic matter
- Have a data set from soil samples taken around the farm since 2012 that shows organic matter improving over the last several years
- Use intensive rotational grazing, in which an area is grazed at high density then rested for 30 to 50 days to allow regrowth and incorporation of trampled forage into the soil
- Financial sustainability is also important: “If you can’t make a living doing what you’re doing, the neighbor’s gonna buy your farm and turn it right back into corn.” – Dave’s father-in-law

#### Maggie

- Started out with erosion prevention as the goal, but is really soil health
- Maggie would tell city friends, “You’ve never seen soil until you’ve been to Iowa” but upon moving back, recognized that the soil is depleted
- Building up mycorrhizal fungi, minimizing erosion, increasing infiltration and moisture holding capacity of the soil, and getting rid of invasive or introduced species
- Soil health is the thing that will help everything else

#### Ruth

- Echoing Maggie and Dave with soil health and livestock
- Values beauty in the landscape, feels that pollinator plantings (replacing monocultures of brome) are like a living art restoration with layers of flowers and all kinds of life
- Excited about all the wildlife in Iowa and what it will be like when prairie and woodland restorations around her homesite are complete
- “The bird song I go to sleep with and wake up to, you can’t put a price on that, and that is truly from the native plantings.”

### 3.3 HOW DID YOU FUND YOUR CONSERVATION PROJECTS? HOW MUCH OF A FACTOR WAS SEED COST IN YOUR DECISION MAKING?

#### Maggie

- Pheasants Forever (can designate SW Iowa ecotype seed), Trees Forever’s Working Watersheds and Beyond grants for native seed, and ISU Prairie STRIPS (little funding but lots of expertise and regular meetings of STRIPS cooperators), Iowa Department of Agriculture and Land Stewardship’s REAP (Resource Enhancement and Protection) offers cost-share for forests and native grasslands
- Talked to two or three native seed sources on the list maintained by PFI (Practical Farmers of Iowa) and purchased a custom mix from Osenbaugh Prairie (25 forbs and 7 grasses); spent nearly \$600 for 1.25 acres
- Now often uses Pheasants Forever mixes ranging from \$190 to \$375 per acre with “comparable diversity” and using seed from Allendan Native Seed in Madison County
- Maggie’s brother started prairie strips at the same time with a less diverse mix (4 grasses and 11 forbs) and his strips haven’t established as well
- “The more diversity you use, the better chance you’ll get good establishment, the better chance it will squeeze out the invasive species or introduced species.”

- Learning more about Iowa ecotypes from Jon Judson of Diversity Farms, and considering using only species that are recorded from Montgomery or neighboring counties

#### Dave

- In-laws put in CRP six years ago (through NRCS) and seed cost was substantial but not all out of their pocket; would not have been willing to pay more than \$500 per acre out of pocket
- Seeded 11 grasses, 3 shrubs, and 40 forbs, and the planting looks very diverse
- Family enjoys driving and walking through the planting and seeing wildlife
- Dave and his wife seeded another native planting on their own land with goal of using it for grazing and forage resource
- Remaining pasture is in introduced cool season grasses like orchard grass, brome, meadow fescue, tall fescue, which are great for spring and fall forage
- Planted native warm season grasses for a drought reserve, with higher quality forage in the hot part of summer when other pastures are dormant
- Created a list of species of interest based on rooting depth and type of roots for soil building as well as forage, and gave it to Jon Judson, who ruled out species not native to Audubon County
- Grass-dominated native seed mix for the grazing area cost \$150 per acre, out of pocket, which is about \$50/acre higher than seeding introduced cool season pasture mix, but much cheaper than a true diverse prairie type seeding
- Considered the native planting a long-term investment
- "If you're paying even \$500 per acre and that lasts for 20 years, 50 years, maybe a couple generations ideally, per year, that's a pretty small investment. So that's what I would tell somebody if they were shocked at the cost initially."

#### Ruth

- Has a couple hundred acres in CRP through NRCS, funded with USDA cost-share, for duck, pheasant, quail habitat, buffers along all streams and creeks, buffers around the farm, and a wetland.
- Contracts for prescribed burning for most mid-contract management, occasionally light tillage
- Obtained a grant from the Environmental Defense Fund for seeding a 2.5 acre prairie and orchard planting for pollinators on home site
- Women Food and Agriculture Network gave a small grant for a red oak tree
- Xerces Society Conservation Innovation Grant (CIG) for another pollinator planting, now in its fifth year
- Seed has been around \$500 per acre, but "try to get anything at the garden center for a whole acre." It's a long-term investment.
- "You can get DNR trees for a dollar each, so there are other ways that you can save on other things. You just can't skimp on the seeding; it's really important."

#### Kevin

- People think seed prices are high, when looking at cost for large coverage area
- On a 10 to 15-year CRP contract, the 50% cost share from FSA helps people accept the price
- Think of it as a long-term investment

- DNR's Prairie Partners Program offers 50% cost share on a 10-year habitat agreement for recreational landowners, going down to as small as an acre. Six native seed dealers and Pheasants Forever participate. The money saved through the cost-share can be shifted to management of the project.

Allie

- Cost-share helps landowners accept seed prices
- Important to take enough time to think about seed mix purchases and consult with planners
- Seed dealers may offer cheaper alternative seed mixes that may not provide the same level of diversity and benefits as the original planned mix
- To avoid "sticker shock," planners need to let landowners know that high diversity seed mixes can be expensive but have long-term benefits
- More push-back on estimates for seed bed prep than the actual seed cost
- Seed dealers in Iowa have been making it easier for people to "go the diversity way"

### 3.4 AUDIENCE QUESTION TO MAGGIE: WHAT TIPS WOULD YOU GIVE TO OTHER PRODUCERS TRYING TO SUCCESSFULLY ESTABLISH PRAIRIE STRIPS THROUGH THEIR FIELDS?

Maggie and Steve

- Work closely with the prairie strips team
- Make sure the strips are laid out so the areas between them are farmable
- Be prepared to maintain them, have access to them for weeding and mowing, and be prepared for herbicide drift damage
- Premise of strips is to put about 10 percent of land into prairie strips to control erosion and introduce more diversity of species
- Maggie and Steve placed strips on existing non-farmed areas (old fence lines, terraces, contour grass waterways), though this made them ineligible for CRP, because of their goal of replacing introduced grasses with native plants

### 3.5 AUDIENCE QUESTIONS TO DAVE: WHAT NATIVE FORBS DO YOU FIND VALUABLE FOR CATTLE GRAZING IN ADDITION TO THE NATIVE GRASSES? WHAT WAS YOUR SITE PREP FOR SEEDING THE NATIVE GRASS MIX — DID YOU INTERSEED INTO BROME OR COOL SEASON, OR WAS IT FORMER CROP GROUND?

Dave –

- The CRP was on former crop ground (soybeans the year before seeding, disked twice); Dave seeded the area in March using Jon Judson's drop seeder
- The native seeding for grazing was on former crop ground, planted for 2-3 years with warm season and cool season annuals for forage to help transition the land from high-input row cropping to more self-sufficient perennial system; grass-heavy native seed mix established poorly possibly due to existing cover of clovers and avoidance of seedbed prep such as disking;

has needed to use herbicide for perennial weeds and lost many forbs as a result; overseeded with grasses two years later and has observed improvement

- Engaged in a grazing trial with PFI on the CRP, but grazing dates are restricted; cattle would eat flowers but not much of the foliage of the forbs, except for one species of legume, and would eat only the top half of the grasses

### 3.6 HOW DID YOU GET NATIVE SEED FOR YOUR PROJECTS? WHAT WAS THAT PROCESS LIKE? WHAT COULD NATIVE SEED DEALERS DO TO IMPROVE THE SEED PURCHASING PROCESS?

Dave

- Jon Judson forwarded the NRCS's Iowa Native Seed Calculator (a spreadsheet) to him, and Dave wishes he'd seen it sooner to break down the diversity, cost, and benefits of the plant mix

Ruth

- Always checks seed mixes to avoid planting a species she's allergic to
- Slowing down the process, taking time to talk more about the seed mix, soils, and the site, would lead to better decisions
- The time crunch gets in the way both in planning the initial seeding and mid-contract management, so that some good options (like opportunities for overseeding) can get missed

Maggie

- Talked directly with a seed producer to get help developing a custom mix for a project
- Buys seed of individual species and hand-harvests seed of favorite or successful species to supplement plantings by overseeding
- Encouraged by the greater education throughout the system on native grasses; not every county NRCS office has an expert in native prairie grasses and forbs; staff are spread very thin and education has been a challenge, especially during Covid
- Joining the Iowa Prairie Network and PFI are ways to talk and share about experiences, Xerces Society, Tallgrass Prairie Center provide resources
- Getting to know your seed dealers personally (like Jon Judson)

Kevin

- NRCS has been investing in new staff positions and training
- Agrees that people need to take time to make good decisions, not feel that deadlines for implementation are time crunch
- People spending more time in outdoor recreation and focused on their farms (because of Covid) is increasing their interest in native prairie and trees for habitat and conservation

Allie

- To reduce the time crunch, look ahead and request advice or consultation sooner, giving staff more time to respond
- It can take a while to route a specific question to the person with the right expertise
- Sometimes there are tight deadlines with tight turnaround
- NRCS has added more positions to the team in Iowa, and training will take time

Ruth

- Very valuable and enjoyable to walk a project with a conservation planner or other expert who can identify the plants and assess the condition of the planting
- Use all available resources: "Make the appointment and get out there with the experts."

Maggie

- A benefit of participating in ISU STRIPS is getting your project evaluated by graduate students and contributing to their education and research

### 3.7 IS THE GENETIC ORIGIN OR PLACE WHERE THE SEED IS GROWN SOMETHING YOU ARE INTERESTED IN? WOULD YOU PREFER TO PURCHASE SEED THAT HAS ITS GENETIC ORIGIN IN-STATE? IF SO, WOULD YOU BE WILLING TO PAY MORE FOR THAT SEED — SAY 10-20% MORE?

Ruth

- Has not seen origin information on seed packages, but wants to know
- "Farming is data; give me the data."

Maggie

- Keeps the seed label from every single planting, looks up any unfamiliar species
- Wants it all to be Iowa native

Dave

- Seed came from Jon Judson who lives in a neighboring county and combines his own restored prairie for seed
- Found out later that some of the seed for the CRP project came from friends in another nearby county who have a remnant prairie, so it's truly native seed to within the county
- Would pay a premium for that

### 3.8 WHEN YOU CONSIDER THE PROJECTS WHERE YOU'VE USED NATIVE SEED, WHAT DOES SUCCESS LOOK LIKE?

Ruth

- The feeling of walking through the flowers, and kicking up the butterflies; feeling like you've done something positive for the world
- "It's way beyond money. It's way beyond my lifetime. And it's just for everyone."

Maggie

- One CSP Native Prairie planting was on highly eroded, degraded ground that was originally pasture and should never have been row cropped
- Looked horrible for the first two years, but this year is covered with beautiful flowers; there are still a few mare's tail, and some bare spots, but the native grasses are coming through, and there's prairie clover and black-eyed Susan.



- The third year, I'm starting to say, "This feels good. This poor soil is no longer bare; it's no longer going to wash away. And I'm envisioning what's going on below ground."
- "To me, it's a success, because it was so pathetic."

Dave

- Annual weeds, especially grasses, declining (foxtails)
- Very little perennial, non-native grasses (not much brome)
- Would still like to see reduction in Canada thistle
- Jon Judson suggests not much you can do besides burn, but well-established prairie will suppress Canada thistle, so that would be a good indicator of success

### 3.9 WHAT COULD BE DONE TO MAKE IT FINANCIALLY FEASIBLE TO KEEP LAND IN PERMANENT NATIVE PLANT COVER AFTER THE CRP CONTRACT EXPIRES?

Dave

- Have five years left in CRP contract to find a way to make it work
- Without rent payments, in-laws would have to consider returning the land to crops
- If used as pasture, the prairie does not provide the same quality of forage as the introduced cool season pasture, so could not pay as much as crop ground rent

Steve

- Would be nice to have a government program to help make a transition from the current system to permanent prairie under grazing, giving producers time to establish grazing patterns, establish their herds, and establish market for the meat

Maggie

- Could be an opportunity through carbon credit programs, because prairie is very good at storing carbon

Allie

- Look for potential opportunities to re-enroll the CRP one or two years before the contract expires
- Depends on the current Farm Bill and what practices are available
- Grasslands CRP is a Working Lands Program that allows grazing or haying land while keeping it in CRP at a lower rental rate; ranked program, so getting in is not assured; NRCS would help work out the grazing plan for that area
- New CRP options – Clear 30 CRP is restricted to water quality specific practices but is moving in the direction of carbon sequestration with a new pilot project; depending on outcome of the pilot, could be an option
- Check in with local USDA office or conservation professional to find out about new programs

Ruth

- Glad she enrolled stream buffers in 15-year program; not sure she could ever go back to plowing right up to the streambank, even if not re-enrolled
- Would be good to offer tax benefits (or other incentive) for keeping stream buffers in place after rental payments from the original contract expire

### 3.10 WHAT ARE THE MOST IMPORTANT LESSONS YOU'VE LEARNED FROM IMPLEMENTING NATIVE PLANTINGS ON YOUR LAND?

Ruth

- Important to be patient; it's not going to look good right away
- CRP buffers that were mowed high look better than ones that were not mowed
- By year three, it starts to look good

Dave

- Patience – the first few years look rough no matter how well it's established; it can be shocking to see all the weeds in the first few years
- CRP grazing windows make it difficult to get both the quality and quantity of forage to maintain good cattle performance
- Worked with PFI to show that grazing could maintain soil, provide bird habitat, and still have high quality cattle forage, but rules would not allow grazing outside the windows, even for a trial
- Would like to influence policy to allow grazing in June and July when the tallgrass species are at their highest quality

Maggie

- "You're never doing anything totally wrong; every seeding is different and you learn something."
- The mistakes we've made and how we can improve are the biggest lessons
- Would love to see the whole farm in prairie, but concerned about wildfire risk
- Having a long-term plan, implementing it as you go, and really studying it
- You're doing good things by building the "livestock underground" as well as the flowers and butterflies

Kevin

- The Three Ps of planting and maintaining a prairie are: patience in year 1, patience in year 2, and, guess what, patience in year 3
- Doing plant identification in year 1 can help landowners to see what's growing and encourage them to be patient while the planting still looks ugly
- Thank you to seed dealers for putting yellow, early successional flowers in the mixes, so that landowners can see success (partridge pea, black-eyed Susan, sideoats grama)
- Prairies didn't form overnight, and they won't
- Help landowners understand that it's not an annual crop; it's going to be something that takes time, but it's really well worth it

Allie

- Patience

- Seed bed prep can make or break the seeding and everything that happens after that
- Work with somebody who really understands site prep and can recommend the right method for the site (disking is not often recommended when going into crop residue)
- To keep ground in native prairie after a contract ends, try grazing and marketing cattle in a way that informs the consumer that it was grazed on natives or on pollinator habitat (possibly an emerging niche), collecting seed for sale, beehives
- Counties may have reduced property tax for land that's no longer in ag production
- Always learning from landowners as much as giving advice to them

## 4 FUNDING SOURCES AND PARTNER ORGANIZATIONS USED BY OUR PANELISTS

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- NRCS Conservation Reserve Program and other Farm Bill conservation programs
- Iowa REAP (Resource Enhancement and Protection)
- DNR Prairie Partners
- Pheasants Forever and Quail Forever
- Xerces Society for Invertebrate Conservation
- Practical Farmers of Iowa
- Iowa State University STRIPS
- Environmental Defense Fund
- Climate Land Leaders
- Ducks Unlimited
- Women Food and Agriculture Network

## 5 ADVICE FROM THE PANEL

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### Purchasing seed –

- Take time to plan and work on the seed mix
- Understanding site conditions will inform the conservation practice that should be pursued and available financial support, as well as influence what species to include
- Get to know your seed dealer
- Work with a copy of the NRCS Native Seed Calculator
- Ask questions and do research: find out which species are native to your state/county and learn about the functional traits of species that will help you meet your conservation goals
- Save your seed tags

### Site preparation –

- Work with someone who is experienced in site preparation for native seedings and can help you choose the right method for your project
- Discussion of cost often centers around seed, but the cost of site preparation also needs to be factored in
- Make plans with maps and lay out prairie plantings to fit with farm operation, if applicable (i.e. planter width)

#### Establishment –

- Mow high during the establishment year
- Consider who will be the one doing the work – yourself or your tenant farmer?
- Be patient in years 1 – 3
- Look over your planting with an expert who can point out what is growing

#### Management –

- Include management in your planning and make sure there will be access for equipment; be prepared for problems such as perennial weeds and herbicide drift
- Walk or drive through the project often to enjoy the land and notice management needs
- Take photos to document your project's progress
- Make an appointment with a conservation professional to go with you to help identify successes and problem areas
- Treat management practices as long-term investments
- Stay ahead of deadlines to help avoid time crunches in decision-making

## 6 LANDOWNERS' NEEDS

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- Guidance for comparing seed mixes on criteria other than only cost and a species list
- More consistent reporting of seed source on seed mix labels
- Communication ahead of program deadlines and awareness of upcoming steps to improve decision-making
- More options for making plantings financially sustainable after CRP contracts expire
- Flexibility in program standards to allow for innovation and development of new options for transitioning to sustainable, profitable, long-term use of native, perennial plantings