Landowners: Prioritizing Conservation on Rented Ground

Practical Farmers of Iowa
Annual Conference
Maggie McQuown
Resilient Farms, Red Oak, IA
January 19, 2019
## 2014 Farmland Ownership

<table>
<thead>
<tr>
<th></th>
<th># in U.S.*</th>
<th>% in U.S.*</th>
<th># in Iowa</th>
<th>% in Iowa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmland Acres</td>
<td>911 Million</td>
<td>100%</td>
<td>30.6 Million</td>
<td>100%</td>
</tr>
<tr>
<td>NOL Owned Acres</td>
<td>283.4 Million</td>
<td>31%</td>
<td>12.6 Million</td>
<td>41%</td>
</tr>
<tr>
<td># of NOLs</td>
<td>1.9 Million</td>
<td>87%</td>
<td>84,741</td>
<td>81%</td>
</tr>
<tr>
<td># of Principal NOLs</td>
<td>1.4 Million</td>
<td>67%</td>
<td>65,398</td>
<td>62%</td>
</tr>
<tr>
<td>Rent $’s Paid to NOLs</td>
<td></td>
<td></td>
<td>$2.8 Billion</td>
<td>75%</td>
</tr>
</tbody>
</table>

*Lower 48 states*
Farm Non-Operator Landowners (NOLs) Profile

NOL Principal Landowners in Iowa are:

- Seniors: Average age = 68.5 years
- Senior Principal NOLs own 70% of land rented
- College educated
- Male = 58%; Female = 42%
- Farm Experience: Never farmed = 40%; retired from farming = 45%; not retired from farming = 15%
Resilient Farms: A Brief History
Farm Goals
Conservation Priorities
Incorporating Conservation into Farm Lease
Progress Made to Date
Future Conservation Plans
<table>
<thead>
<tr>
<th>Year</th>
<th>Resilient Farms: A Brief History</th>
</tr>
</thead>
<tbody>
<tr>
<td>1899</td>
<td>JE/Retta Taylor purchased farm; named it “Pleasant Prospect”.</td>
</tr>
<tr>
<td>1920s</td>
<td>JE Taylor built swale terraces; planted evergreen windbreaks.</td>
</tr>
<tr>
<td>1945</td>
<td>Grandson Earl McQuown acquired farm; used multi-year crop rotations (corn, small grains, cattle pastures); added erosion-control control ponds.</td>
</tr>
<tr>
<td>1980s</td>
<td>Began contour and no-till conservation practices; added 2 terraces/tile and grass waterway.</td>
</tr>
<tr>
<td>1990s</td>
<td>Bryan/Lisa Huff became operators; added CRP8A grass waterway.</td>
</tr>
<tr>
<td>2004</td>
<td>Signed 10-year Conservation Stewardship Program (CSP) contract.</td>
</tr>
</tbody>
</table>
Resilient Farms: 2009 Map

- CRP8A Waterway
- Terraces/Tiles
- Dilapidated CSP Prairie
- Eroded Waterway
- Woods
- Creek
- Dilapidated Ponds

2/2/09
Erosion Issues
2013 - 2014
May 29, 2013
Farm Goals

- Be a good steward of my land, my watershed and my community
- Diversify farm practices from two crop corn/soybean rotation
- Maintain row crop acres & income production
- Re-imagine building site → fit current/future needs, eco-friendly and honor farm heritage
- Create a transition plan → sustainability, role model for best practices
Conservation Goals/Priorities

- Minimize erosion
- Minimize nutrient loss; reduce PKN runoff into watershed
- Regenerate/build soil health and permeability
- Diversify and improve beneficial use of all non-row crop acres
- Provide robust, dispersed wildlife habitat
Farm began as owner-operator placing high value on conservation

1997-2007 lease: Crop Share with some conservation
  - Contour farming, no-till and CSP

2008-2009 Leases: Cash Rent (Mom in assisted living)

2010-2012 Leases: Flex-rent (2 versions 3 years)

2013-Present Leases: Blend of Crop Share & Flex-rent (2 versions, 7 years)
  - Multi-year
  - Shares risk/reward
Landowner/Farm Operator Relations

Guiding Principles for Success - Both Parties

- Shared values/goals
- Long-term view
- Share the risk & reward
- Open, candid and regular communication
- Mutual respect
- Advanced planning
- Flexibility/willingness to adapt, test & improve
- Clearly defined & written roles/responsibilities
- Partnership of co-equals/complementary contributions
Landowner/Farm Operator Relations

- **Guiding Principles for Success - NOLs**
  - Be interested: Interact with Operator regularly
  - Be knowledgeable: Read Ag publications, join Ag organizations, attend seminars/conferences
  - Be present (at least 2 times/year): Walk the land, note problems/opportunities, flag areas
  - Be reasonable: Invest in improvements, respect current operation type/equipment compatibility

- **Guiding Principles for Success - Operators**
  - Be upfront: Let NOL know what is/isn’t working, discuss challenges/problems earlier than later
  - Be positive steward of land: Don’t just plant & harvest
<table>
<thead>
<tr>
<th>Year</th>
<th><strong>Resilient Farms: Progress Made to Date</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/2012</td>
<td>Great-granddaughter Maggie McQuown inherited farm; renamed it “Resilient Farms”; installed solar array.</td>
</tr>
<tr>
<td>2013</td>
<td>Signed 2.4 acre riparian buffer CRP contract; added 2 terraces/tile; created produce garden; 1st cover crop test - 23 ac.</td>
</tr>
<tr>
<td>2014</td>
<td>Joined ISU STRIPS program; seeded 2 prairie strips; prepped riparian buffer.</td>
</tr>
<tr>
<td>2015</td>
<td>Planted riparian buffer in May (native trees, shrubs prairie mix); 2nd cover crop test - 31 ac.</td>
</tr>
<tr>
<td>2016</td>
<td>Seeded 2 pollinator plots &amp; cover crop on west ridge; added 2 terraces/tile, 5 mini-dams/tile &amp; grass waterway; burned prairie strips; 3rd cover crop test - 34 ac.</td>
</tr>
<tr>
<td>2017</td>
<td>Overseeded strip edges &amp; pollinator plots; aerial seeded cover crop - 130 acres.</td>
</tr>
<tr>
<td>2018</td>
<td>Added 1 terrace &amp; prairie waterway; seeded 1 prairie plot; prepped 3 future prairie strips; aerial seeded cover crop - 130 ac.</td>
</tr>
</tbody>
</table>
Resilient Farms: 2018 Map

- Terraces/Tile
- CSP Prairie
- Prairie Strip
- CRP8A Waterway
- CRP Riparian Buffer
- Pollinator Plot
- Pollinator Plot
- Prairie Waterway
- Prairie Strip
Riparian Buffer
2013 - 2018
Riparian Buffer Timeline

- **Spring 2013 - Spring 2015**
  - Eliminate invasive reed canary grass and other species
  - 3 Controlled burns, multiple mowings, 2 Rodeo/Fusillade herbicide treatments

- **2015**
  - May - Plant seedlings, install deer shelters
  - Summer/Fall/Winter - Mow, weed, seed prairie, maintain shelters

- **2016** - Mow, weed, plant replacement seedlings, prune, maintain shelters

- **2017** - Mid-contract spot spraying, mow, prune, remove selected shelters

- **2018** - Mow, spot spray weeds, prune, remove shelters
May 18, 2015: Planting
Shelters or Cages

- Very important for success - 575 total

- Economical Cages:
  - Tenax Plastic Poultry Fence 3’ x 25’ roll cut into 50” lengths (6 cages/role)
  - 4’ Angle iron posts
  - 8” Cable ties - 3-4 per cage

- Testing: Plantra plastic grow tubes
  - Expensive
  - Not suitable for shrubs and some tree species

- Tested Repellex, hot pepper ointment and Deer Stopper
May 23, 2015: Shelters
June 10, 2015: Arrowheads, Milkweed & Butterflies
July 17, 2016: Marestail Jungle
Fall 2016
April 2017: Blossoms Everywhere
May 2017: Mid-Contract
Spot Spraying
Prairie Strips
2014 - 2018
June 19, 2014: Planting STRIPS

- Pheasants Forever of Montgomery County Drill
- Custom Mix: 7 Grasses + 25 Forbs
Prairie Strips: Summer 2014
Dec 22, 2016: Prescribed Burn
Dec 22, 2016: Prescribed Burn
2018
Cover Crops
2013 - 2018
## Cover Crops Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Row Crop</th>
<th>Seed Plan</th>
<th>Method</th>
<th>Seed Date</th>
<th># of Acres</th>
<th>$/Ac</th>
<th>CS/Acre</th>
<th>OOP/Acre</th>
<th>OOP Split</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>C→SB</td>
<td>Tillage Radish</td>
<td>Aerial Heli</td>
<td>9/3</td>
<td>23</td>
<td>$49.70</td>
<td>$21.74</td>
<td>$27.96</td>
<td>50/50</td>
</tr>
<tr>
<td>2014-2015</td>
<td>SB→C</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-2016</td>
<td>C→SB</td>
<td>Rye/Rape</td>
<td>Aerial Heli</td>
<td>Early Sept</td>
<td>24</td>
<td>$36.25</td>
<td>$25.00</td>
<td>$11.25</td>
<td>50/50</td>
</tr>
<tr>
<td>2016-2017</td>
<td>SB→C</td>
<td>Oats/Radish</td>
<td>Aerial Heli</td>
<td>9/24</td>
<td>34</td>
<td>$35.61</td>
<td>$0.00</td>
<td>$35.61</td>
<td>100% NOL</td>
</tr>
<tr>
<td>2017-2018</td>
<td>C→SB</td>
<td>Rye/Rape</td>
<td>Arial Plane</td>
<td>9/14</td>
<td>139</td>
<td>$24.22</td>
<td>$15.00</td>
<td>$9.22</td>
<td>100% NOL</td>
</tr>
<tr>
<td>2018-2019</td>
<td>SB→C</td>
<td>Oats/Radish</td>
<td>Arial Plane</td>
<td>9/13</td>
<td>130</td>
<td>$32.00</td>
<td>$15.00</td>
<td>$17.00</td>
<td>100% NOL</td>
</tr>
</tbody>
</table>

Total 6-Year Investment: 
- Operator = $457.00
- NOL = $5,159.0
Cover Crops: Fall 2015 2nd Test
2016 Oats/Tillage Radish: Aerial Seeded 9/24 & Establishment 10/8
2017
Rye/Rapeseed:
All Row Crop
Acres Seeded by Plane
Future Plans: 2019-2024

- Additional 3 Prairie Strips:
  - Convert dilapidated fence line and 2 non-row crop rocky contour strips
  - 1st must eliminate Canada thistle in areas
- Saturated Buffer along riparian buffer
- Convert 2 dilapidated ponds:
  - Natural wetland filtering nutrients before flowing into 1 rehabilitated pond
- Continue Cover Crops - annual seeding & tests
- Rehab upper third of creek riparian buffer:
  - Eliminate invasive tree/shrub species
  - Replace with native species
Resilient Farms: 2019-2024

- Prairie Strip & Wetland
- Wetland & Pond Rehab
- Riparian Buffer Rehab
- Prairie Strip
- Saturated Buffer
- Prairie Strip
Future Plans: Long Term

- Convert additional non-row crop acres into prairie strips
- Pursue 3-year crop rotation, adding a small grain
- Add small animals - e.g. hair sheep, chickens
- Remove, replace & add fences as needed
- Demolish and rehab selected buildings - sheds, old farm house, grain bins, etc.
Conservation & Ag Management Resources

- Practical Farmers of Iowa: [www.practicalfarmers.org](http://www.practicalfarmers.org)
- Trees Forever: [www.treesforever.org](http://www.treesforever.org)
- Iowa State University STRIPS Research Project: [www.nrem.iastate.edu/research/STRIPs](http://www.nrem.iastate.edu/research/STRIPs)
- Iowa DNR Forestry Bureau Services: [www.iowadnr.gov/Conservation/Forestry](http://www.iowadnr.gov/Conservation/Forestry)
- USDA Farm Services Agency (FSA) Conservation Programs: Search
  - USDA Conservation Programs: Complete list of FSA Conservation Programs
  - USDA CRP Practices Library: Complete list of CRP Practices
- UNI Tall Grass Prairie Center: [https://tallgrassprairiecenter.org/](https://tallgrassprairiecenter.org/)
- Iowa Pheasants Forever Native Seed Program: [http://iowapf.net/NativeGrassProgram.aspx](http://iowapf.net/NativeGrassProgram.aspx)
- Iowa State University Extension-Ag Decision Maker: [www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm)
Riparian Buffer Design Resources

- Stewards of our Streams: Buffer Strip Design - Iowa State University

- University of Minnesota Extension
  - [https://www.extension.umn.edu/environment/agroforestry/riparian-forest-buffers-series/design-of-riparian-forest-buffers/](https://www.extension.umn.edu/environment/agroforestry/riparian-forest-buffers-series/design-of-riparian-forest-buffers/)

- University of Nebraska Extension
  - [http://extensionpublications.unl.edu/assets/pdf/g1557.pdf](http://extensionpublications.unl.edu/assets/pdf/g1557.pdf)

- Maryland Cooperative Extension
  - [https://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/riparianbuffers/FS725.pdf](https://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/riparianbuffers/FS725.pdf)

- Soil Bioengineering or Streambank Restoration for Riparian Forest Buffers
  - [https://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/riparianbuffers/FS729.pdf](https://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/riparianbuffers/FS729.pdf)
Questions? Comments?