Stoney Creek Farm
Grant, Dawn & Karlie Breitkreutz

*Cow-Calf Producer – Rotational Grazing
*Cover Crops for fertility, grazing, forage
This is how and why we started down the path we are on.
Home Pastures:
1. Split 47-acre pasture in half
2. We were cutting & spraying thistles and fertilizing once per year.

Changes:
1. NRCS EQIP contract to split 47-acre pasture into 9 paddocks with 2 water tanks & 2900 feet of above-ground water line.
2. Improvements noticed after one grazing season.
Summer water tank installation. Evolved to 14 tanks and a total of 18,400 feet of waterline over all managed pastures.
Native pasture converted, through grazing, from 3 species to over 20 species.
First pass on this paddock.
Sadly, this has become more common during the spring in our area.
Soil from our field.

Soil from a tilled field.
Live roots
3 ½ feet
in soil
March 2016
• The current production model is all about killing.
• Kill weeds, kill pests, kill fungus, kill diversity.

• Are we killing our soil?
• Are we killing OUR PROFIT?
April 23, 2017
Symptoms of a Degraded Resource

- Lack of Moisture
- Poor Fertility
- Compaction
- Weeds
- Low Yields
- High Input Costs
- Too Much Moisture
- Salinity

- Disease
- Pests
- Litter: Too Much/Too Little
- Labor
- Erosion
- Poor Infiltration
No-Till seeded soybeans.

Moldboard Plowing every other year.
SOIL HEALTH PRINCIPLES

1. Keep soil covered.
3. Increase crop diversity.
4. Keep living roots in the soil.
5. Integrate livestock.
Single-Species Cover

- We began with single species.

- Two out of three years failed.

- We failed to follow soil health principle #3, increase crop diversity.
Cover crop mix following wheat harvest.

<table>
<thead>
<tr>
<th>Mix</th>
<th>Variety/Crop</th>
<th>Germ</th>
<th>Origin</th>
<th>Test Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>Rymin Winter Rye</td>
<td>85%</td>
<td>SD</td>
<td>07/15</td>
</tr>
<tr>
<td>25%</td>
<td>Fridge Winter Trit</td>
<td>95%</td>
<td>KS</td>
<td>05/15</td>
</tr>
<tr>
<td>19%</td>
<td>TillageMax Dover Oat/Radish</td>
<td>90%</td>
<td>CA/NZ</td>
<td>04/15</td>
</tr>
<tr>
<td>12%</td>
<td>VNS Winter Pea</td>
<td>79/1%</td>
<td>MT</td>
<td>02/15</td>
</tr>
<tr>
<td>6%</td>
<td>VNS Hairy Vetch</td>
<td>85%</td>
<td>AUS</td>
<td>05/15</td>
</tr>
<tr>
<td>6%</td>
<td>Medium Red Clover w/ Nitro</td>
<td>85/5%</td>
<td>OR</td>
<td>07/15</td>
</tr>
<tr>
<td>5%</td>
<td>Winfred Brassica</td>
<td>96%</td>
<td>OR</td>
<td>07/14</td>
</tr>
<tr>
<td>2%</td>
<td>Tillage Radish</td>
<td>90%</td>
<td>OR</td>
<td>05/15</td>
</tr>
</tbody>
</table>

96.77% Purity, 0.19% Crop, 3.03% Inert, 0.01% Weeds

Noxious Weeds: None

Lot 5042 Wt. 50 lb.

Prairie Creek Seed, Inc., 21995 Fillmore Rd., Cascade, IA 52033 877-754-4019
After wheat harvested & straw baled.
Six weeks later, same field.
Corn planter set up for no-till.
We adapted our no-till drill to interseed cover crop into corn.
Freshly seeded cover into standing corn and surviving cover from fall.
Soil Temperatures

[Image showing two soil temperature meters, one reading 87°F and the other 107°F.]
Soil Temperatures

• 70 degrees, 100% moisture used for growth.
• 100 degrees, 15% moisture used for growth, 85% moisture lost through evaporation and transpiration.
• 130 degrees, 100% moisture lost through evaporation and transpiration.
• 140 degrees, soil bacteria die.
September - chopping corn silage.
Approved cover crop seeded in corn crop on DNR-owned land as part of the cooperative farming agreement. Picture taken November 8th.
We had the neighbors stumped.
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<th>Variety/Crop</th>
<th>Germ</th>
<th>Origin</th>
<th>Test Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>27%</td>
<td>Iron &amp; Clay Cowpea</td>
<td>80%</td>
<td>FL</td>
<td>4/15</td>
</tr>
<tr>
<td>20%</td>
<td>PCS-SS2020 Sorghum Sudan Grass</td>
<td>80%</td>
<td>TX</td>
<td>4/15</td>
</tr>
<tr>
<td>10%</td>
<td>VNS Hairy Vetch</td>
<td>90%</td>
<td>ARG</td>
<td>12/15</td>
</tr>
<tr>
<td>10%</td>
<td>Indianhead Lentil</td>
<td>85%</td>
<td>ND</td>
<td>6/16</td>
</tr>
<tr>
<td>10%</td>
<td>Wonderleaf Millet</td>
<td>85%</td>
<td>TX</td>
<td>4/15</td>
</tr>
<tr>
<td>7%</td>
<td>VNS Sunn Hemp</td>
<td>89/5%</td>
<td>S. Africa</td>
<td>12/15</td>
</tr>
<tr>
<td>2%</td>
<td>Medium Red Clover</td>
<td>70/15%</td>
<td>OR</td>
<td>6/16</td>
</tr>
<tr>
<td>2%</td>
<td>Barkant Turnip</td>
<td>90%</td>
<td>OR</td>
<td>12/15</td>
</tr>
<tr>
<td>2%</td>
<td>VNS Ethiopian Cabbage</td>
<td>94%</td>
<td>OR</td>
<td>1/16</td>
</tr>
<tr>
<td>2%</td>
<td>Hunter Brassica</td>
<td>95%</td>
<td>OR</td>
<td>1/16</td>
</tr>
<tr>
<td>2%</td>
<td>Barlca Rape</td>
<td>90%</td>
<td>OR</td>
<td>12/15</td>
</tr>
<tr>
<td>2%</td>
<td>Tillage Radish</td>
<td>90%</td>
<td>OR</td>
<td>5/16</td>
</tr>
<tr>
<td>2%</td>
<td>Perejovik Sunflower</td>
<td>80%</td>
<td>SD</td>
<td>7/15</td>
</tr>
<tr>
<td>2%</td>
<td>Winfred Brassica</td>
<td>98%</td>
<td>OR</td>
<td>1/16</td>
</tr>
</tbody>
</table>

98.05% Purity, 0.22% Crop, 1.57% Inert, 0.15% Weeds

Noxious Weeds: None Lot 6062 Wt. 50 lb.
Prairie Creek Seed, Inc. 21995 Fillmore Rd.,
Cascade, IA 52233  563-852-3192
Installing fence in cover crop field.
After the first day of grazing.
Too Much or Too Little

• If you have too much water, you need to increase your crop intensity to use more water.
  • *In other words, grow cover crops!*

• If you do not have enough water, you need to increase the water holding capacity of your soils.
  • *In other words, grow cover crops!*
1700 beneficial insect species for every one pest species.

Gabe Brown, 2017
# Wheat “Sense”

<table>
<thead>
<tr>
<th>Expense</th>
<th>Return</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeding/acre</td>
<td>Cow Feed/acre</td>
<td>$110</td>
</tr>
<tr>
<td>Seed</td>
<td>Straw/acre</td>
<td>$35</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$145</td>
</tr>
</tbody>
</table>

Net Gain=$87

Delayed Gains/Savings for Following Crop Year

<table>
<thead>
<tr>
<th>Purchased Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased Fertilizer</td>
<td>$39/acre</td>
</tr>
<tr>
<td>Purchased Herbicide</td>
<td>$11-$20/acre</td>
</tr>
<tr>
<td>Purchased Seed</td>
<td>$53/acre</td>
</tr>
</tbody>
</table>

Total $103/acre

Total Net Gain=$190/acre
One of the best rewards for our efforts!

CLEAN WATER!!!
Stoney Creek Farm has been recognized as an agricultural water quality certified producer using best management practices that enhance water quality.
“Upon this handful of soil our survival depends. Husband it and it will grow our food, our fuel and our shelter and surround us with beauty. Abuse it and the soil will collapse and die, taking humanity with it.”

Sanskrit Text – 1500 B.C.
If you build it, they will come!
God blessed us with this life, and our goal is to leave the land in better condition for the generations to come.

This is our little piece of heaven!!
Thank You!