Welcome to the

East National Technology Support Center Live Meeting

Thursday, June 26, 2014, 11 am Eastern Time

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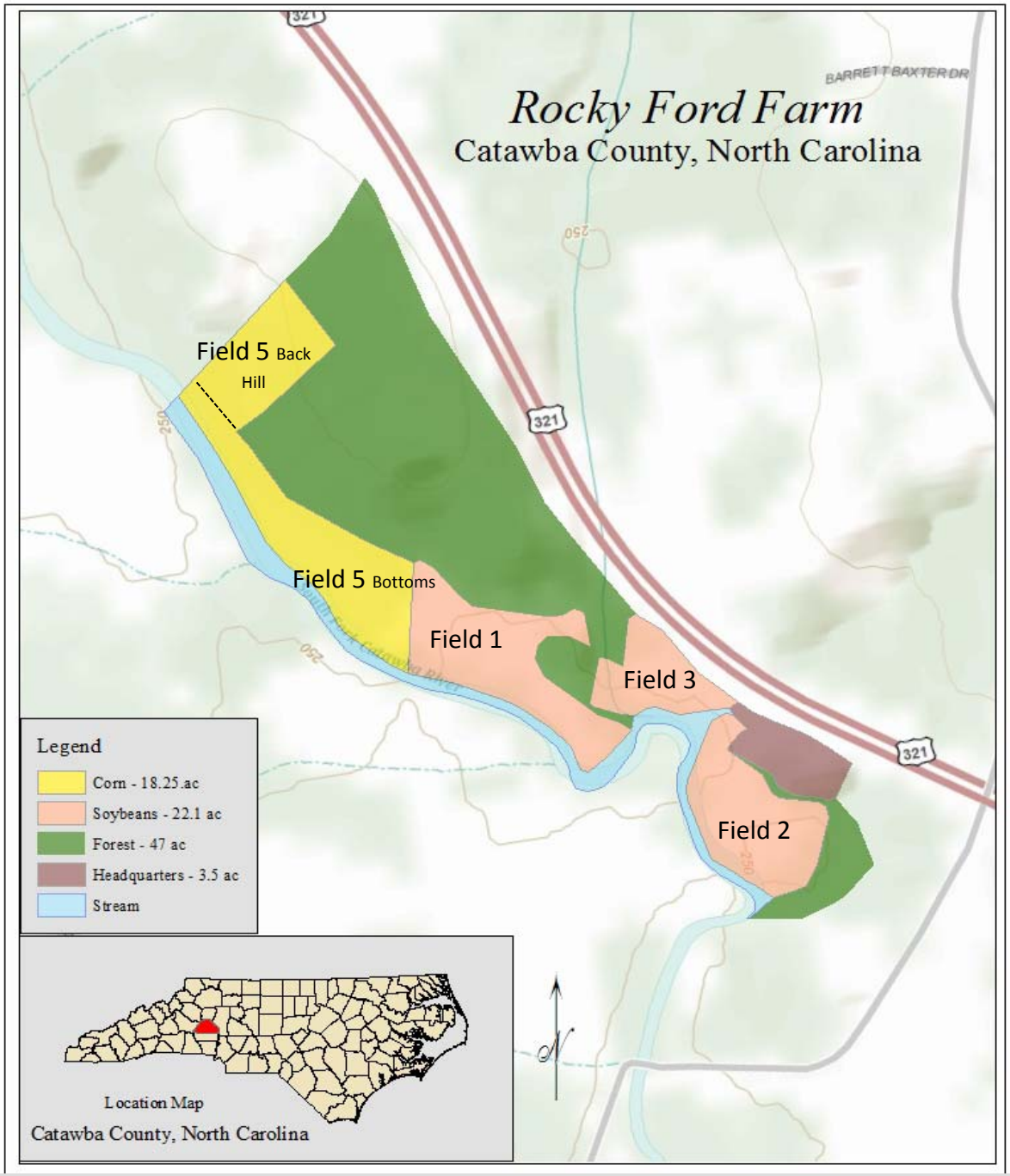
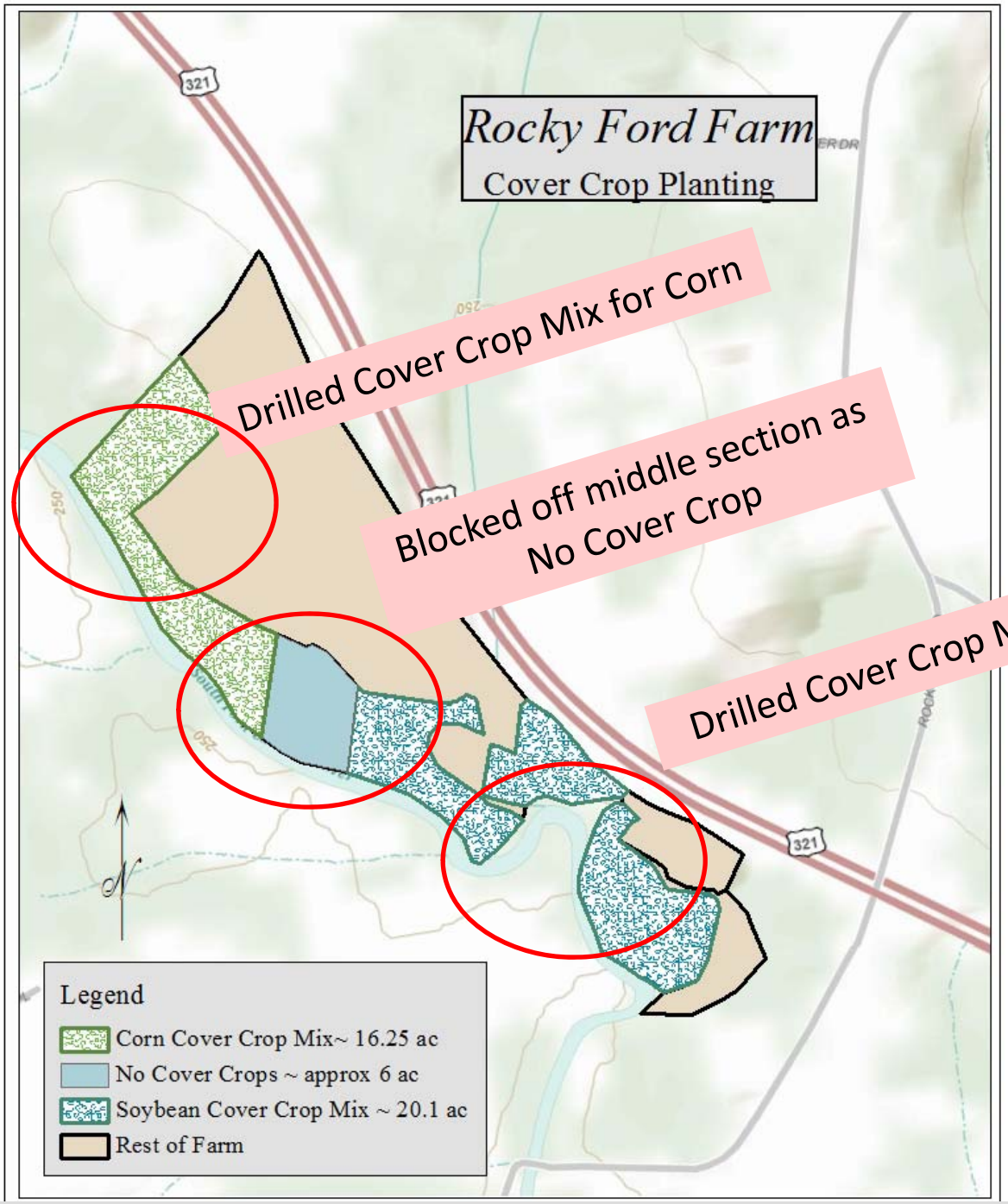
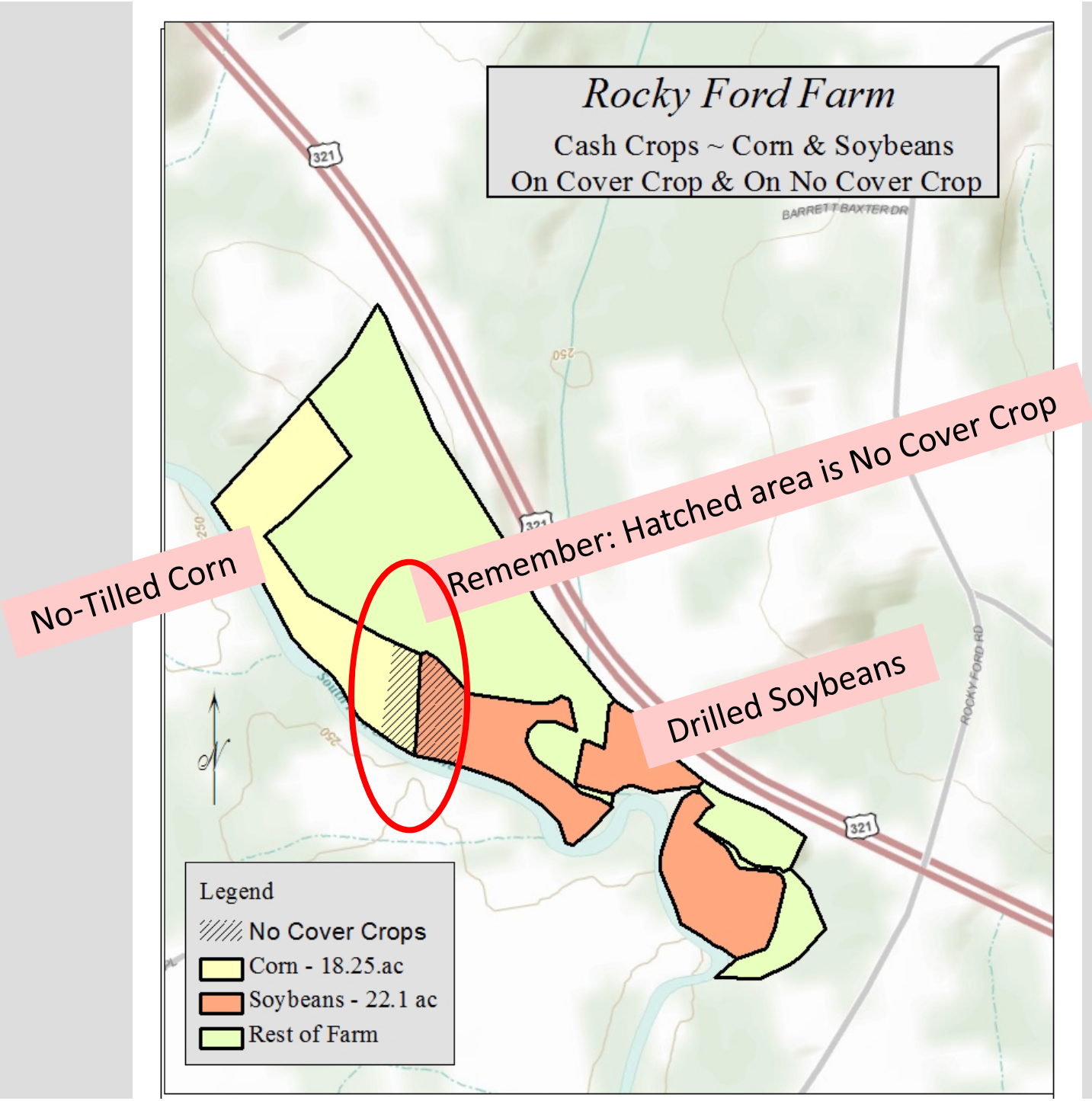
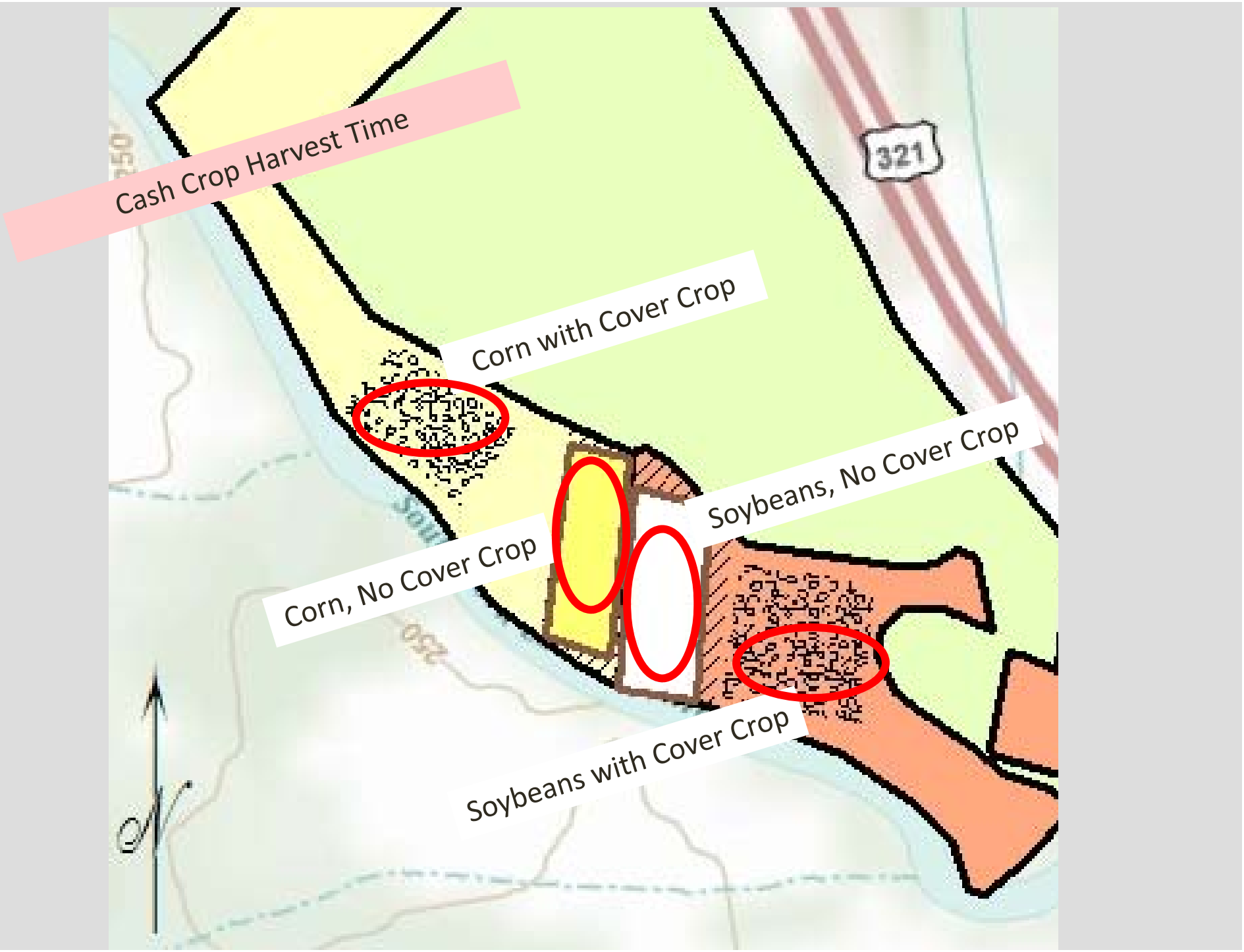


Corn	18.25 ac
Soybeans	22.1 ac
Forest	47 ac
Headquarters	3.5 ac
Total Crop	40.35 ac
Total Farm	90.85 ac


Rocky Ford Farm
Cover Crop Planting
Drilled Cover Crop Mix for Corn
Blocked off middle section as No Cover Crop
Drilled Cover Crop Mix for Soybeans
321
Legend
Corn Cover Crop Mix~ 16.25 ac
No Cover Crops ~ approx 6 ac
Soybean Cover Crop Mix ~ 20.1 ac
Rest of Farm


Rocky Ford Farm
Cash Crops ~ Corn & Soybeans
On Cover Crop & On No Cover Crop
No-Tilled Corn
Remember: Hatched area is No Cover Crop
Drilled Soybeans
Legend
No Cover Crops
Corn - 18.25.ac
Soybeans - 22.1 ac
Rest of Farm
321
BARRETT BAXTER DR
ROCKY FORD RD


Cash Crop Harvest Time
Corn with Cover Crop
Soybeans, No Cover Crop
Corn, No Cover Crop
Soybeans with Cover Crop
321

Corn, NO Cover Crop

Plot:
Length = 460 feet
Width = 175 feet
Sq Ft = 80,500 Acres = 1.85

Truck Load: 291.8 bushels

Arithmetic:
292 bu/1.85 ac = 157.7 bu/ac

Soybeans, NO Cover Crop

Plot:
Length = 486 feet
Width = 179 feet
Sq Ft = 86,994 Acres = 2

Truck Load: 101.18 bushels

Arithmetic:
101 bu/2 ac = 50.5 bu/ac

Corn, Cover Crop

Plot:
Length = 460 feet
Width = 172 feet
Sq Ft = 79,120 Acres = 1.82

Truck Load: 314.3 bushels

Arithmetic:
314.3 bu/1.82 ac = 172.7 bu/ac

Soybeans, Cover Crop

Plot:
Length = 335 feet
Width = 346 feet
Sq Ft = 115,910 Acres = 2.66

Truck Load: 182.6 bushels

Arithmetic:
182.6 bu/2.66 ac = 68.6 bu/ac

Increased Yield = 172.7 – 157.7 = 15
= **15** bu/ac

Increased Yield = 68.6 – 50.5 = 18.1
= **18** bu/ac rounded

INCREASED Benefits, Soybeans /Corn side-by-side

Benefits based on Yield

	Corn	Soybeans
Yield INCREASE due to Cover Crops, bu/ac	15	18
PERCENT Yield Increase	9%	35%
Price Received, $/bu	$6.65	$12.75
Gross Revenue INCREASE, $/ac	$99.75	$299.50

Benefits based on Production Inputs

Reduced Nitrogen @ $0.46/unit, $/ac	$46	$23
Reduced Post Herbicide, $/ac	$28	$28
Cash Crop Production Cost Savings, $/ac	$74	$51
Total ADDITIONAL Benefit, $/ac	$173.75	$280.50

INCREASED Costs, due to Cover Crop, First Year

Per Acre Costs	Corn	Soybeans
Learning Costs	$ 67	$ 67
Soil Tests	$ 8	$ 8
Cover Crop Seed Costs	$ 56.77	$ 42.75
Drill Cover Crop Seed	$ 14	$ 14
Additional Fertilizer	$ 0	$ 0
Field Monitoring	$ 11	$ 11
Terminate Cover Crop	$ 23.06	$ 8.06
Additional Cost to plant Cash Crop	$ 15.10	$ 1.10
Additional Harvest & Post Harvest Cost	$ 0	$ 0
Total ADDITIONAL Cost	**$195.14**	**$152.13**
Corn Cost – Soybean Cost	**$43.01**	

INCREASED Costs, due to Cover Crop, First Year

Per Acre Costs	Corn	Soybeans
Learning Costs	$ 67	$ 67
Soil Tests	$ 8	$ 8
Cover Crop Seed Costs	$ 56.77	$ 42.75
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Additional Fertilizer	$ 0	$ 0
Field Monitoring	$ 11	$ 11
Terminate Cover Crop	$ 23.06	$ 8.06
Additional Cost to plant Cash Crop	$ 15.10	$ 1.10
Additional Harvest & Post Harvest Cost	$ 0	$ 0

Cover Crop Seed Costs in detail …

	Corn		Soybeans	
	Lb/Ac	$/Ac	Lb/Ac	$/Ac
Cereal Rye @ $0.28/lb	20	$5.60	10	$2.80
Crimson Clover, pre-inoculated @ $1.50/lb	7	$10.50	5	$7.50
Radishes @ $2.55/lb	6.25	$15.94	6	$15.30
Oats @ $0.25/lb			10	$2.50
Triticale @ $0.34/lb			10	$3.40
Ryegrass @ $0.85/lb	15	$12.75		
Total Cover Crop Seed for Mix	48.25		41	
Mixing, Bagging @ $0.10/lb		$4.83		$4.10
Shipping		$7.15		$7.15
Total Seed Cost/Ac		**$56.77**		**$42.75**
Corn Cost – Soybean Cost		**$14.02**		

Cover Crop Seed Costs in detail …

Seeding Rates	Corn		Soybeans	
	Lb/Ac	$/Ac	Lb/Ac	$/Ac
Cereal Rye @ $0.28/lb	20	$5.60	10	$2.80
Crimson Clover, pre-inoculated @ $1.50/lb	7	$10.50	5	$7.50
Radishes @ $2.55/lb	6.25	$15.94	6	$15.30
Oats @ $0.25/lb			10	$2.50
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Total Cover Crop Seed for Mix	48.25		41	
Mixing, Bagging @ $0.10/lb		$4.83		$4.10
Shipping		$7.15		$7.15

Cover Crop Seed Costs in detail …

Species	Corn		Soybeans	
	Lb/Ac	$/Ac	Lb/Ac	$/Ac
Cereal Rye @ $0.28/lb	20	$5.60	10	$2.80
Crimson Clover, pre-inoculated @ $1.50/lb	7	$10.50	5	$7.50
Radishes @ $2.55/lb	6.25	$15.94	6	$15.30
Oats @ $0.25/lb			10	$2.50
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Mixing, Bagging @ $0.10/lb		$4.83		$4.10
Shipping		$7.15		$7.15

Cover Crop Seed Costs in detail …

Seed Handling	Corn		Soybeans	
	Lb/Ac	$/Ac	Lb/Ac	$/Ac
Cereal Rye @ $0.28/lb	20	$5.60	10	$2.80
Crimson Clover, pre-inoculated @ $1.50/lb	7	$10.50	5	$7.50
Radishes @ $2.55/lb	6.25	$15.94	6	$15.30
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Ryegrass @ $0.85/lb	15	$12.75		
Total Cover Crop Seed for Mix	48.25		41	
Mixing, Bagging @ $0.10/lb		$4.83		$4.10
Shipping		$7.15		$7.15

Termination Costs in detail …

	Corn $/ac	Soybeans $/ac
Herbicide Spray, no additional, same spray as for winter weeds	$0	$0
Field Monitoring to check termination success	$0.66	$0.66
Second Herbicide Spray due to Ryegrass	$15.00	$0
Roll Cover using 8-ft cultipacker, 100 hp Kabota tractors. Includes fuel, other operating costs, and labor.	$7.40	$7.40
Total Termination Cost/Ac	**$23.06**	**$8.06**
Corn Cost – Soybean Cost	**$15.00**	

Termination Costs in detail ...

	Corn $/ac	Soybeans $/ac
Herbicide Spray **not** due to Cover Crops, same spray as for winter weeds	$0	$0
Field Monitoring to check termination success	$0.66	$0.66
Second Herbicide Spray due to Ryegrass	$15.00	$0
Roll Cover using 8-ft cultipacker, 100 hp Kabota tractors. Includes fuel, other operating costs, and labor.	$7.40	$7.40

Additional Costs to Plant Cash Crop in detail …

	Corn $/ac	Soybeans $/ac
Additional planting times due to the 2” of cover crop biomass and checking for seed placement. Moved the planter more slowly across the field. Additional 2 hours for the 36.35 acres @ $20/hr. $40/36.35.	$1.10	$1.10
Additional starter fertilizer on corn due to higher C:N from the cover crop residue.	$14.00	$0
Total Added Cash Crop Planting Cost/Ac	**$15.10**	**$1.10**
Corn Cost – Soybean Cost	**$14.00**	

Additional Costs to Plant Cash Crop in detail …

	Corn $/ac	Soybeans $/ac
Additional planting times due to the 2” of cover crop biomass and checking for seed placement. Moved the planter more slowly across the field. Additional 2 hours for the 36.35 acres @ $20/hr. $40/36.35.	$1.10	$1.10
Additional starter fertilizer on corn due to higher C:N from the cover crop residue.	$14.00	$0

Note: As soil health improves over time, the nutrient cycling will eliminate this cost.

Net Benefits in First Year

	Corn	Soybeans
Total Benefits due to Cover Crop, $/ac	$173.75	$280.50
Total Costs due to Cover Crop, $/ac	$195.14	$152.13
Net Benefit / Ac	**-$21.39**	**$128.37**

Net Benefits in First Year

	Corn	Soybeans
Total Benefits due to Cover Crop, $/ac	$173.75	$280.50
Total Costs due to Cover Crop, $/ac	$195.14	$152.13
Net Benefit / Ac	**-$21.39**	**$128.37**

WHAT HAPPENED TO CORN?

HIGHER COSTS DUE TO COVER CROP CHOICES FOR CORN

Recall: Corn CC Cost = $195.14/ac – Soybean CC Cost = $152.13/ac ➔ $43.01/ac.

Let's revisit the costs by reorganizing the information.

Higher Corn CC Cost due to Higher Seeding Rates of Same Species, $/ac	$6.44
Higher Seed Cost due to Higher Mixing & Bagging Costs, $/ac	$0.73
Higher Corn CC Seed Cost due to Ryegrass, $/ac	$6.85
Higher Corn CC Termination Cost, $/ac	$15.00
Higher Corn Planting Cost due to additional N for higher C:N from residue, $/ac	$14.00
Total Higher Cost, $/ac	$43.01

WITHOUT RYEGRASS,
CORN COVER CROP WOULD HAVE INCREASED NET BENEFITS

Net Benefits, First Year, Substitute Ryegrass

Actual Numbers previously presented:	Corn
Total Benefits due to Cover Crop, $/ac	$173.75
Total Costs due to Cover Crop, $/ac	$195.14

Substitute Rye for Ryegrass:

Save: Do not purchase Ryegrass Seeds, $/ac	- $12.75
Purchase: Substitute Rye, 15 lb/ac @ $0.28/lb, $/ac	+ $4.20
Save: Ryegrass 2nd Termination, $/ac	- $15.00
Cost Savings due to Substitute for Ryegrass, $/ac	$23.55
Total CC Costs for Corn after Substitution, $/ac	$171.59
Net Benefit / Ac	**+ $2.16**

Summary:

Shared the experience of a small-acreage, beginning farmer as he transitioned to cover crops in his second year of farming, and his first-year cost and benefit differences for corn & soybeans.

Learned the on-farm test comparing cover crop and no cover crop yield.

Saw how one cover crop species can make a significant difference in the net benefits of the cover crop mix.

Both corn and soybeans experienced increased yields and decreased routine production costs.

Cover crop seeding rates, seed varieties, and seed vendor costs impact profits.

Impact of ryegrass in the local ecosystem on net benefits:

- Increased Seed Costs
- Increased Termination Costs

Example of a cost, nitrogen, that will decline as soil health improves.

Answered the question: What happened to corn? Ryegrass.


The beginning …