

Coming Full Circle: Back to Native Forages



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Where Were We?

- Pre-1943
 - Common bermudagrass
 - Johnsongrass
 - ‘Pensacola’ bahiagrass
 - Native forages



Where Are We Now?

- ‘Coastal’ bermudagrass 1943
- ‘Midland’ bermudagrass 1953
- ‘Coastcross-1’ bermudagrass 1967
- ‘Tifton 44’ bermudagrass 1978
- ‘Tifton 9’ bahiagrass 1987
- ‘Tifton 85’ bermudagrass 1992
- ‘Ozark’ bermudagrass 2001

For the commercial cow-calf producer,
the day of intensively managed
bermudagrass **may** be behind us.

Fertilizer Price Changes

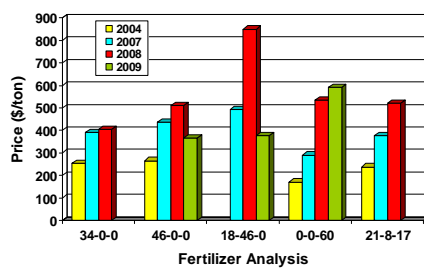
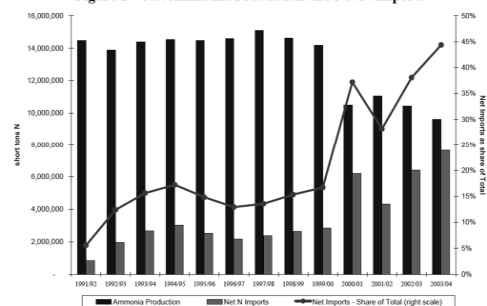
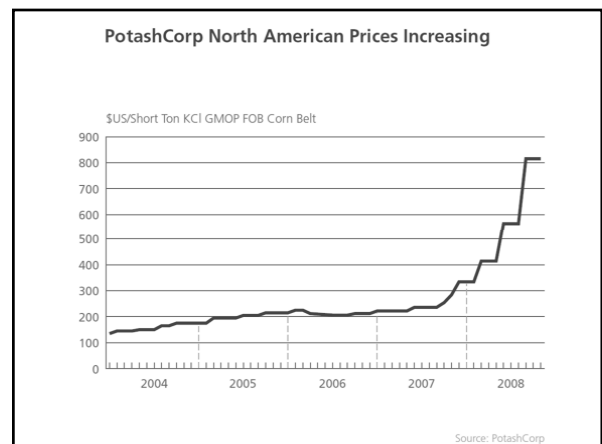
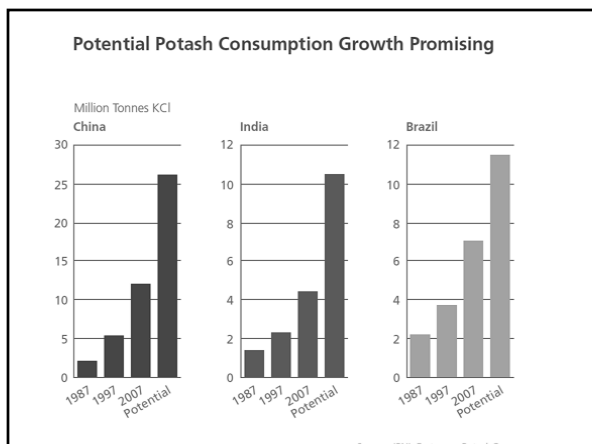
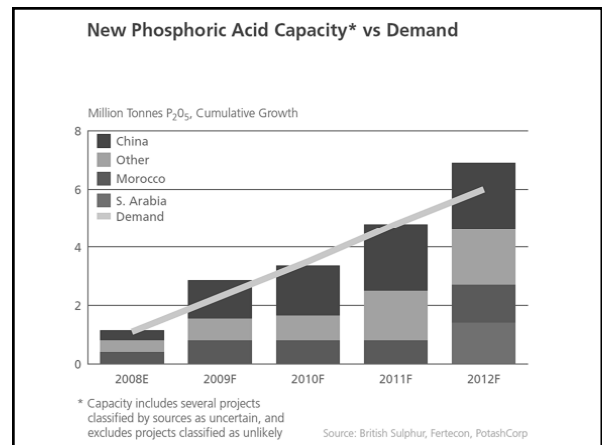
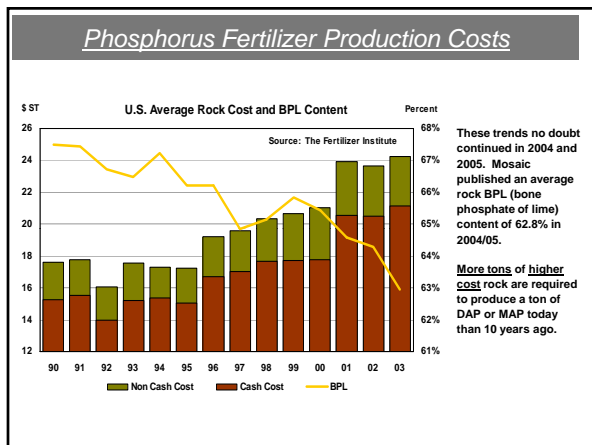
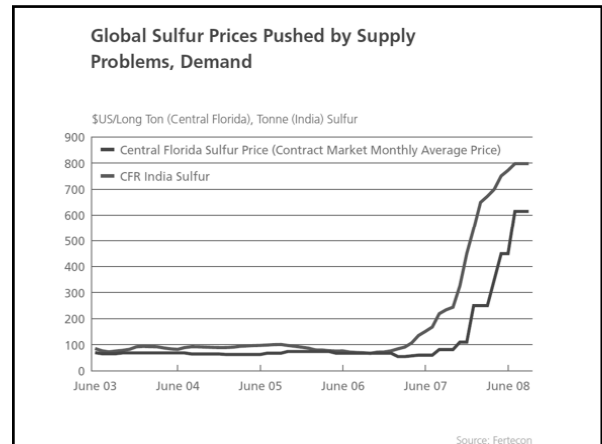
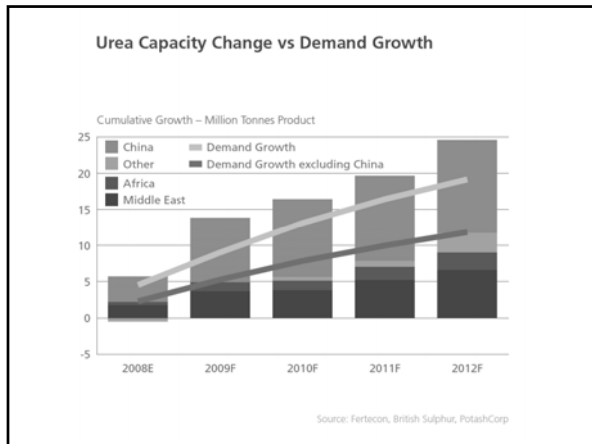
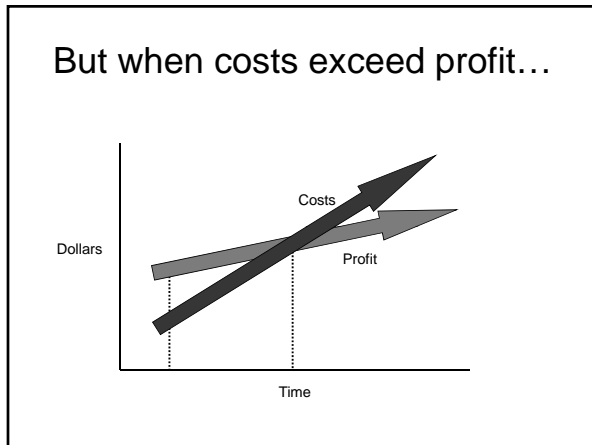
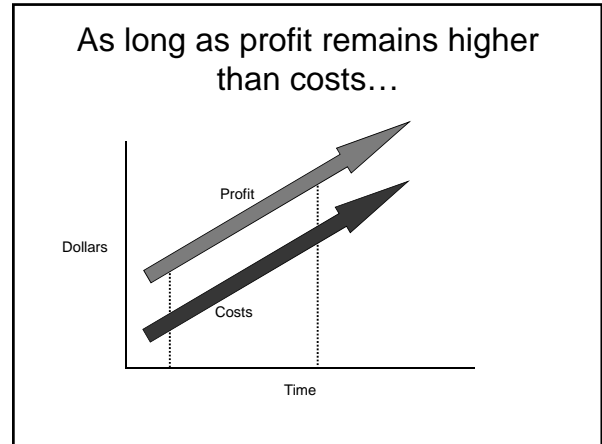
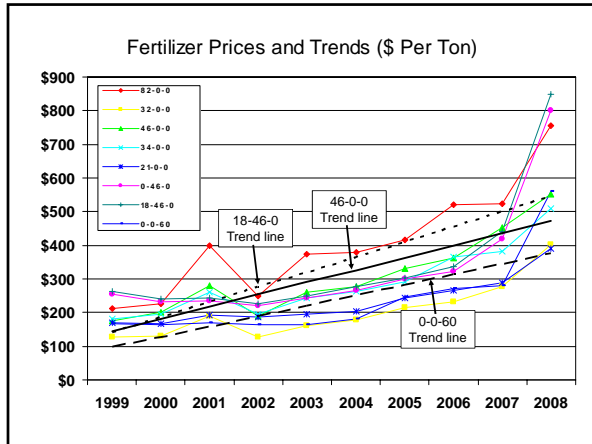


Figure 1 - U.S. Ammonia Production and Net N Imports







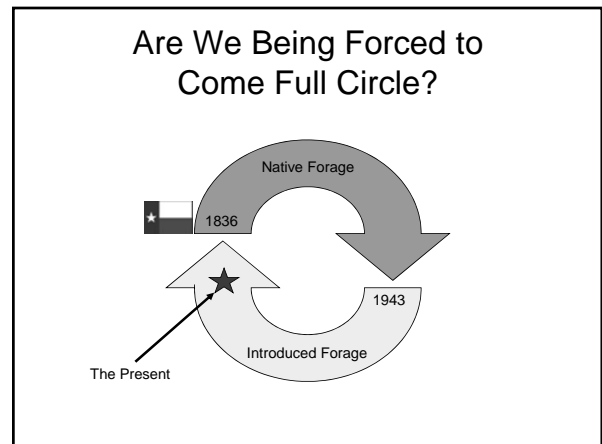
Marginal returns from native prairie versus hybrid bermudagrass. Fertilizer = \$50/acre/year

	Native	BG
Acres	300	300
Stocking Rate (ac/AU)	10	4
Number of AUs	30	75
Conception Rate (%)	90	90
Calf Crop	27	68
Gross Sales @ \$600/hd	\$16,200	\$40,500
Fertilizer Input/ac	\$0.00	\$50.00
Total Fertilizer	0	15000
Land Cost	\$15.00	\$15.00
Land Cost per Cow	\$150.00	\$60.00
Total Land Cost	\$4,500	\$4,500
Other Cow cost per year	\$300.00	\$300.00
Cow Cost * AUs	\$9,000	\$22,500
Gross Margin	\$2,700	-\$1,500

Marginal returns from native prairie versus hybrid bermudagrass. Fertilizer = \$40/acre/year

	Native	BG
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Stocking Rate (ac/AU)	10	4
Number of AUs	30	75
Conception Rate (%)	90	90
Calf Crop	27	68
Gross Sales @ \$600/hd	\$16,200	\$40,500
Fertilizer Input/ac	\$0.00	\$40.00
Total Fertilizer	0	12000
Land Cost	15	15
Land Cost per Cow	150	60
Total Land Cost	\$4,500	\$4,500
Other Cow cost per year	\$300	\$300
Cow Cost * AUs	\$9,000	\$22,500
Gross Margin	\$2,700	\$1,500

Currently, 200 lbs/acre of 24-8-16 = **\$40.50/acre**

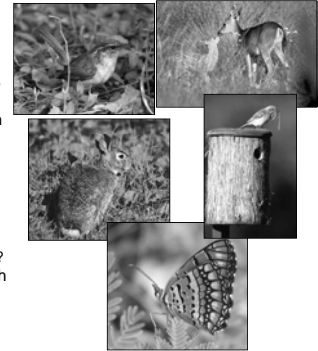


What About Native Forages Today?

- They were here first...
 - Adapted to the local environment and are persistent with good management.
 - Drought tolerant, cold tolerant
- Requires different grazing management.
 - Cannot graze to the soil surface
 - For example, tall grasses should not be grazed shorter than 10-12".
 - Learn to recognize key species and when to rotate cattle
- Whether to change the forage base or not depends on landowner goals, objectives, and type of operation.
 - Livestock vs. wildlife

Transition to Native Forages

- Pros:
 - **Significant** reduction in input costs
 - Still maintain **Open-Space Land** tax appraisal
 - Still have a **Schedule F** on Income Tax Return
 - Still enjoy the **lifestyle**
 - Enhanced **wildlife** habitat associated with native forages
 - Depends on habitat created.
 - Enhances property value?
 - **Aesthetics** associated with native forages
 - Native prairie **restoration**



Transition to Native Forages

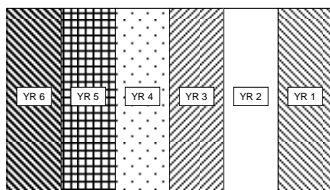
- Cons:
 - May take **2 - 3 years** to establish.
 - Your **site** may not support natives.
 - Soil nutrient status?
 - **Reduced** stocking rate
 - Is this a negative?
 - Consider the economic analyses...
 - Grazing management considerations
 - Use of prescribed **fire**?



How to Transition to Native Forages

- Do not try to convert everything at once!
 - Phase in **10-20%** per year.
- **Plan** at least one year in advance.
 - Obtain soil test.
- Allow bermudagrass production to **accumulate**.
 - Similar to hay harvest...
- Apply **5 quarts** of glyphosate per acre in late summer.
- Begin **seedbed preparation** during winter.
- Plant seed in **early spring**.
 - Fall option???
- **Keep** some bermudagrass for hay/sacrifice pasture.
 - The goal is not to eradicate all bermudagrass,
 - Improve the economic situation
 - Increase biodiversity
 - Increase wildlife habitat

Transition Over Time



Which Species?

- Check NRCS Standard Soil Survey
- Depends on the site...
 - Uplands versus bottomland
- Consider the "Big 4"
 - Big bluestem, little bluestem, yellow indiangrass, switchgrass (not Alamo)
 - Depending on site, you may wish to include eastern gamagrass.
- Sideoats grama?
- Others
- Blends off-the-shelf?
- NOTE: You will probably never re-create the prairie, but increased biodiversity is the key.



Additional Thoughts



- Hay harvest mines the soil of nutrients!
 - I recommend that you do not cut native forages for hay.
 - If you do, you will have to fertilize...
- If you currently have bahiagrass, kleingrass, Old World bluestem, or buffelgrass, these may be treated like native forages...i.e., little to no fertilizer input.
 - Again, if you cut for hay, you will have to fertilize...
 - Will not provide the same quality of wildlife habitat.

Summary

- The economy may dictate a **new paradigm**.
- Native forages offer many of the **benefits** of introduced forages.
 - Property tax and income tax savings, life style...
- Native forages offer many benefits **not** provided by introduced forages.
 - Improved **wildlife habitat**, reduced input costs, aesthetics, increased plant and animal **species diversity**.
- **Stocking rates will have to be reduced** compared with well-managed introduced forages.
- May require **2 - 3 years** to achieve a stand of native forages.

Think forage...



Questions?

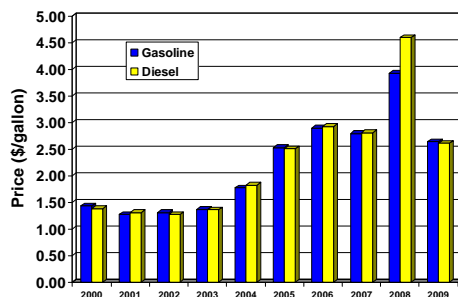


Caveat Emptor!!



If you have a site that has had the soil nutrient status depleted and/or the pH reduced, you may have to “fertilize up” to an appropriate level prior to establishment of native forages.

Changes in gasoline and diesel prices.
2000 – 2008.



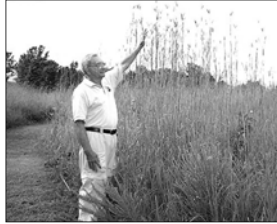
Your Personal Situation

- Full-time Operator
 - If you require a specific level of production and you have bermudagrass...
 - Native forages
 - Diversification
 - Wildlife, other enterprises
- Part-Time Operator
 - More options available since the livelihood does **NOT** depend on the operation.



Most Landowners are Part-Time Producers

- Reasons for being a part-time operator...
 - Special tax appraisal for **Open-Space Land**
 - Otherwise known as the ag exemption
 - Schedule F** on Income Tax Return
 - Additional tax reduction
 - Lifestyle**
 - You just like it!



Estimated Costs and Returns Per Acre 'Coastal' Bermudagrass Hay & Grazing (2 Cuttings). Falconer, 2008

ITEM	UNIT	PRICE	QUANTITY	Total Amount
INCOME				
Hay	roll	\$79.00	2.15	\$163.85
Hay	roll	\$79.00	2.15	\$169.85
TOTAL INCOME				\$339.70
DIRECT EXPENSES				
CUSTOM				
Custom Spread (Truck)	applied	\$5.00	2	\$10.00
Soil Testing	acre	\$0.20	1	\$0.20
FERTILIZER				
100-3P-3K @ \$331/ton	applied	\$83.63	2	\$167.27
HERBICIDE				
Broadleaf Herbicide	part	\$4.35	2	\$8.70
OTHER				
Hay Wrap	bale	\$1.26	4.3	\$5.42
OPERATOR LABOR				
Tractors	hour	\$12.00	1.51	\$18.12
DIESEL FUEL				
Tractors	gallon	\$4.40	6.19	\$27.24
REPAIR & MAINTENANCE				
Implements	acre	\$23.18	1	\$23.18
Tractors	acre	\$4.26	1	\$4.26
INTEREST ON OP. CAP.	acre	\$12.63	1	\$12.63
TOTAL DIRECT EXPENSES				\$275.82
RETURNS ABOVE DIRECT EXPENSES				
FIXED EXPENSES				
Implements	acre	\$33.66	1	\$33.66
Tractors	acre	\$11.26	1	\$11.26
TOTAL FIXED EXPENSES				
TOTAL SPECIFIED EXPENSES				\$320.74
RETURNS ABOVE TOTAL SPECIFIED EXPENSES				
RESIDUAL ITEMS				
Land-Hay Meadow	acre	\$20.00	1	\$20.00
RESIDUAL RETURNS				(\$1.04)

Native Forage versus Bermudagrass

	Native	BG	Native	BG	Native	BG	Native	BG
Acres	300	300	300	300	300	300	300	300
Stocking Rate (ac/AU)	14	6	12	5	10	4	9	3
Number of AUs	21	50	25	60	30	75	35	88
Conception Rate (%)	90	90	90	90	90	90	90	90
Calving Crop	19	45	23	54	27	68	32	79
Gross Sales @ \$600/hd	\$11,400	\$27,000	\$13,500	\$32,400	\$16,200	\$40,500	\$19,059	\$47,647
Fertilizer Input/ac	\$0.00	\$50.00	\$0.00	\$50.00	\$0.00	\$50.00	\$0.00	\$50.00
Total Fertilizer	0	15000	0	15000	0	15000	0	15000
Land Cost	\$15	\$15.00	\$15	\$15.00	\$15	\$15.00	\$15	\$15.00
Land Cost per Cow	\$214	\$90.00	\$180	\$75.00	\$150	\$60.00	\$127.50	\$51.00
Total Land Cost	\$4,494	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,480	\$4,500
Other Cow cost per year	\$300	\$300.00	\$300.00	\$300.00	\$300.00	\$300.00	\$300.00	\$300.00
Cow Cost * AUs	\$6,300	\$15,000	\$7,500	\$18,000	\$9,000	\$22,500	\$10,588	\$26,471
Gross Margin	\$606	-\$7,500	\$1,500	-\$5,100	\$2,700	-\$1,500	\$3,991	\$1,676

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Fertilizer Input/ac	\$0.00	\$30.00	\$0.00	\$30.00	\$0.00	\$30.00	\$0.00	\$30.00
Total Fertilizer	0	9000	0	9000	0	9000	0	9000
Land Cost	15	15	15	15	15	15	15	15
Land Cost per Cow	214	90	180	75	150	60	128	51
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Gross Margin	\$606	-\$1,500	\$1,500	-\$900	\$2,700	-\$4,500	\$3,991	\$7,676

NOTE: For fertilizer to be \$30 per acre, nutrients would have to cost \$0.23/lb. For a 200-lb/acre application of 24-8-16 (441/ton) the current price is \$44 per acre.

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Fertilizer Input/ac	\$0.00	\$67.80	\$0.00	\$67.80	\$0.00	\$67.80	\$0.00	\$67.80
Total Fertilizer	\$0	\$20,340	\$0	\$20,340	\$0	\$20,340	\$0	\$20,340
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Cow Cost * AUs	\$6,300	\$15,000	\$7,500	\$18,000	\$9,000	\$22,500	\$10,588	\$26,471
Gross Margin	\$606	-\$12,840	\$1,500	-\$10,440	\$2,700	-\$6,840	\$3,991	-\$3,664

* Fertilizer cost based on: N as urea @ \$495/ton or \$0.54/lb; P2O5 as 18-46-0 @ \$800/ton with credit given for the available N or \$0.66 per lb; K2O as 0-0-60 @ \$500/ton or \$0.42/lb