

Native Warm-season Grasses: Naturally Adapted Productive Pastures



Heart of America Grazing Conference
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UT Beef and Forage Center

Extended Grazing: Complementing Tall Fescue w/ Warm-season Grasses

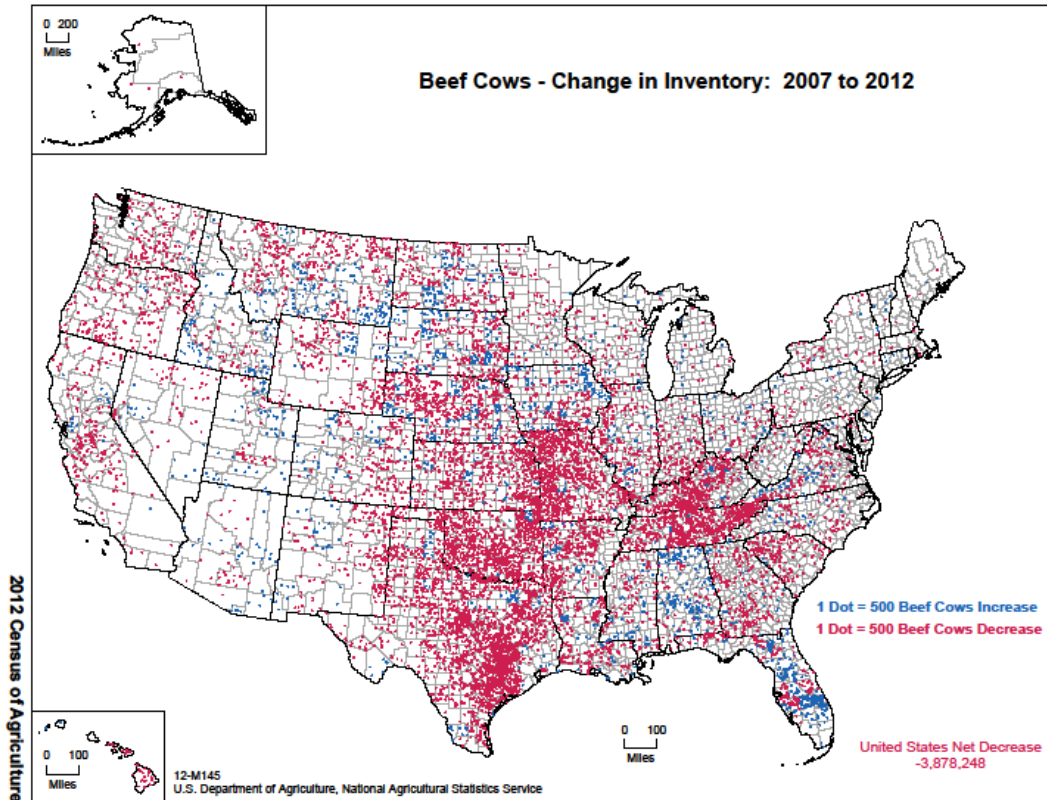
Improved:

- drought resiliency
- calving rates/birth weights
- backgrounding/stocker gains
- heifer development
- purchased feed budgets
- opportunities for stockpiling
- condition of CSG pastures (rest)
- soil health
- enterprise profitability/viability



Jessamine Co, KY Aug 2008

Poor Summer Forage Production



Jan 2014 - lowest inventory since 1951!!!

Native Grass Grazing Work at UT

Can an poorly understood forage tool play a role in complementing tall fescue pasture systems?

- Understanding the building blocks: basic production research
- Economics
- Comparison to summer annuals
- Managing the building blocks



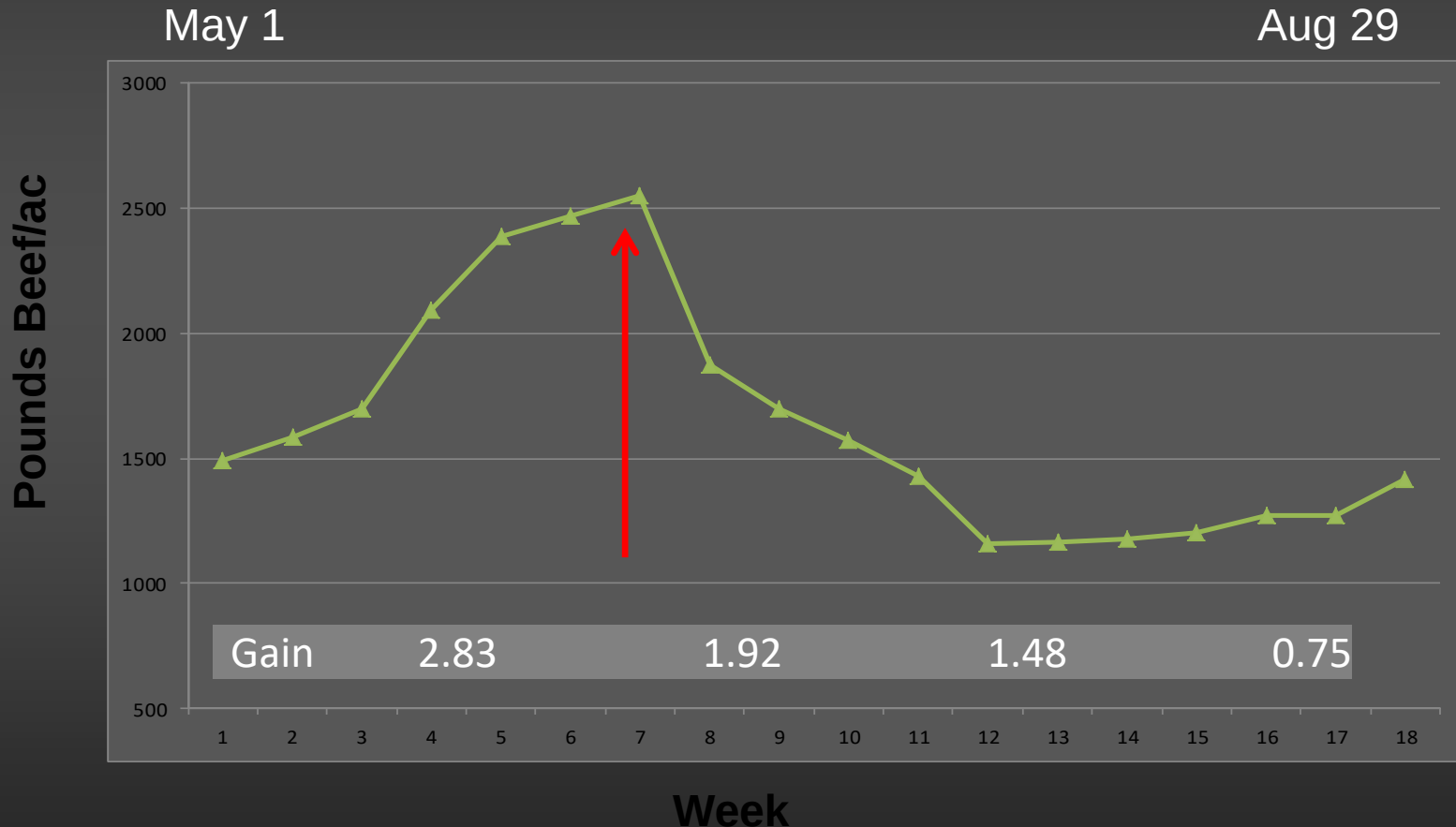
Steer Grazing Performance

Forage	ADG (lb/day)	Gain (lb/ac)
BB/IG	2.11	369
SG	1.74	435
EG	1.06	247



M. Backus MS Thesis, 2012

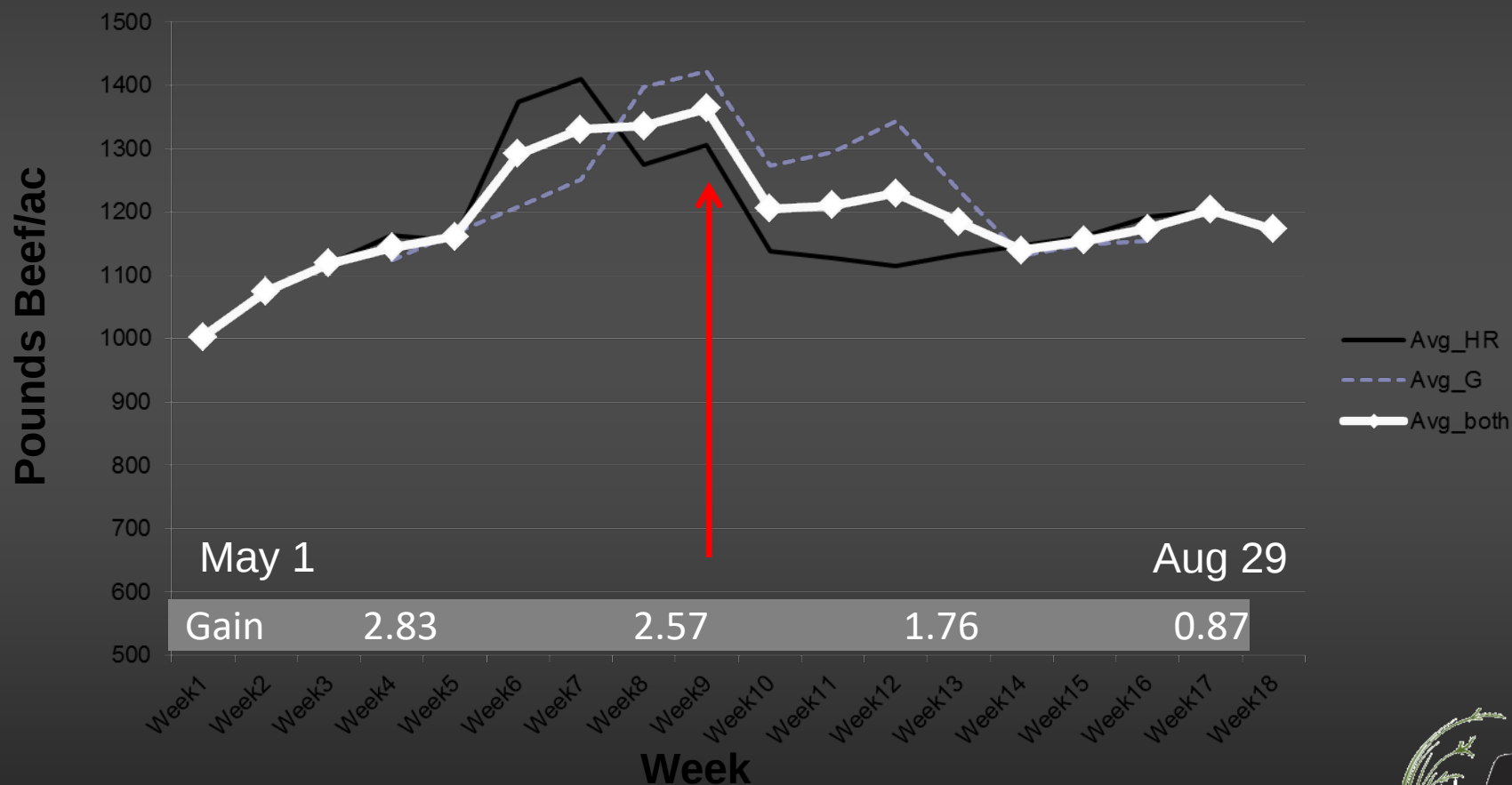
Stocking – Switchgrass



Stocking history during 2010-2012 grazing trials, Highland Rim REC, UT



Stocking – Big blue/indiangrass



Stocking history during 2010-2012 grazing trials, Highland Rim and Greenville REC, UT



Bred Heifer Performance

Forage	ADG (lb/day)	Gain (lb/ac)
BB/IG	2.13	168
SG	1.65	170

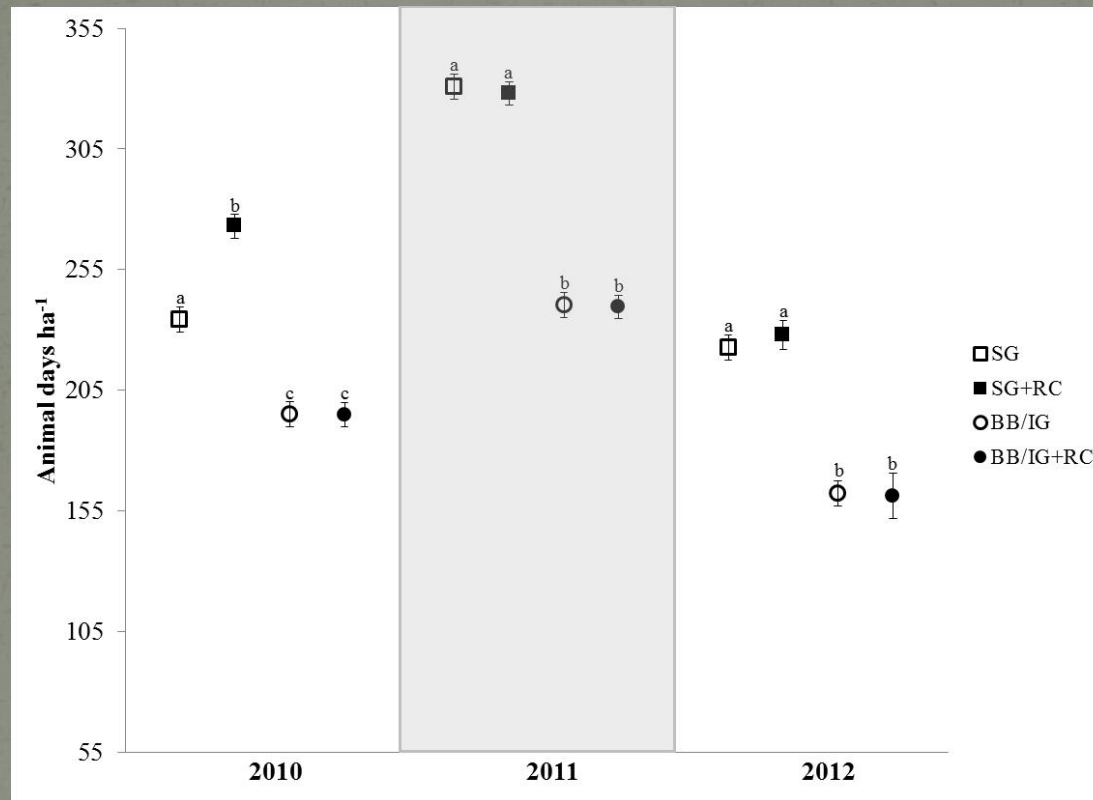


Keyser et al. 2016. Agronomy Journal 108:373–383

Middle Tennessee REC, 2010 -2012; 1,050# Holstein heifers
Based on grazing for 60 days (SG) and 56 days (BBIG)

Legumes: Red Clover Inter-seeding

Almost no impact on carrying capacity



Keyser et al. 2016. Agronomy Journal 108:373–383

Legumes: Red Clover Inter-seeding



Keyser et al. 2016. Agronomy Journal 108:373–383

Beef Prices

- ▣ Sell May 15th vs. graze NWSG 90-d, sell Aug 15th
- ▣ Price of beef is important to consider

Average Price (per cwt) from 2007-2012 by Month and Weight

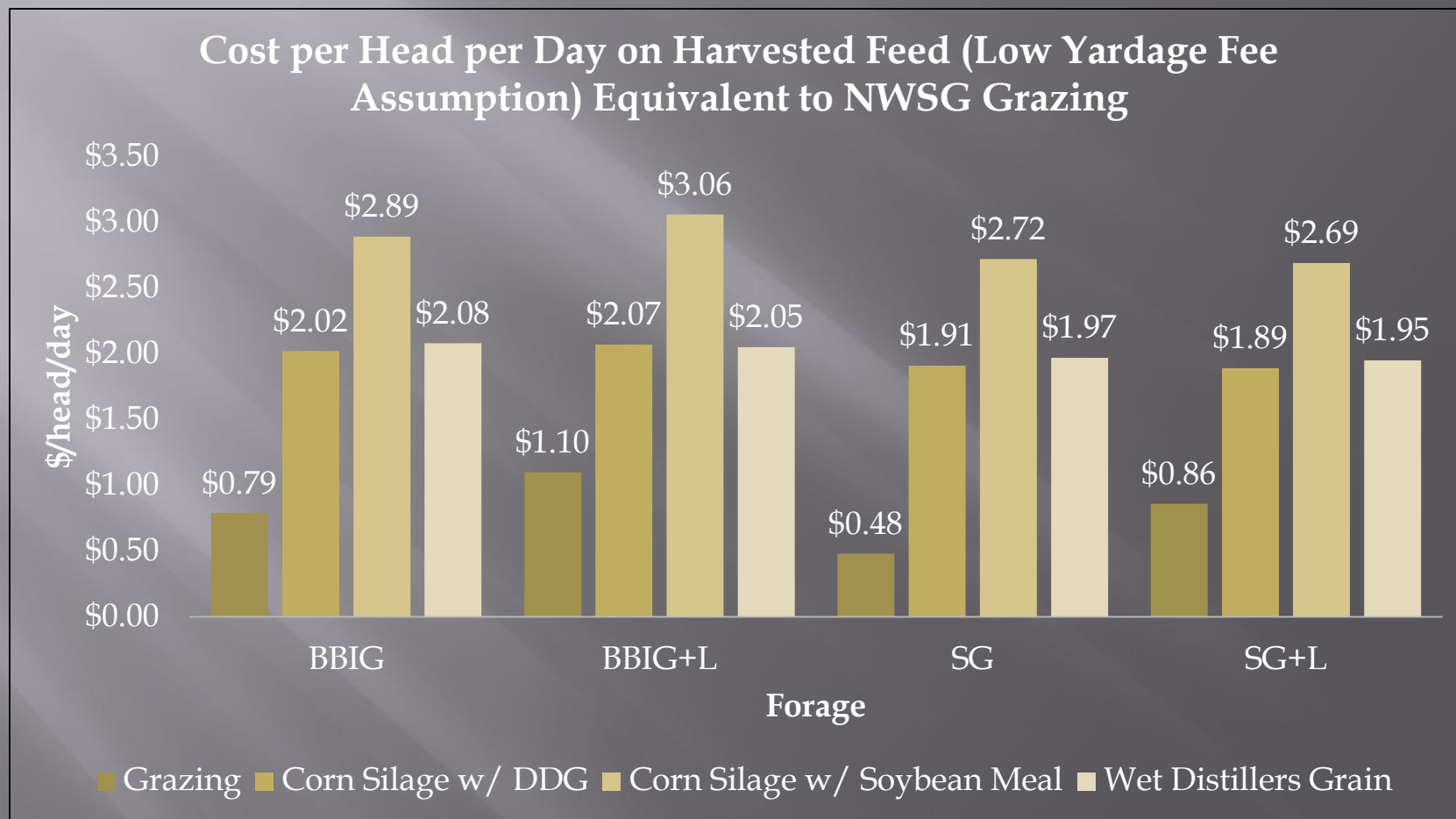
Weight	May	June	July	August
500-600	\$124.89	\$121.34	\$117.02	\$117.62
600-700	\$117.12	\$114.71	\$112.24	\$112.55
700-800	\$110.81	\$109.17	\$107.42	\$108.10

Economics of Grazing Beef Steers

Expected beef yield (lb/acre) and net returns (\$/acre) by grass species and location		
NWSG†	Beef Yield	Net Returns
<u>West TN</u>		
SG	229 ^a	\$104 ^a
BBIG	266 ^a	\$136 ^a
EG	248 ^a	\$99 ^a
<u>Middle TN</u>		
SG	436 ^c	\$345 ^c
BBIG	370 ^b	\$257 ^b
† BBIG=Big Bluestem and Indiangrass; SG=Switchgrass; EG=Eastern Gamagrass ^{a,b} If letter is the same across treatment and location, then means are not different (p = 0.05).		

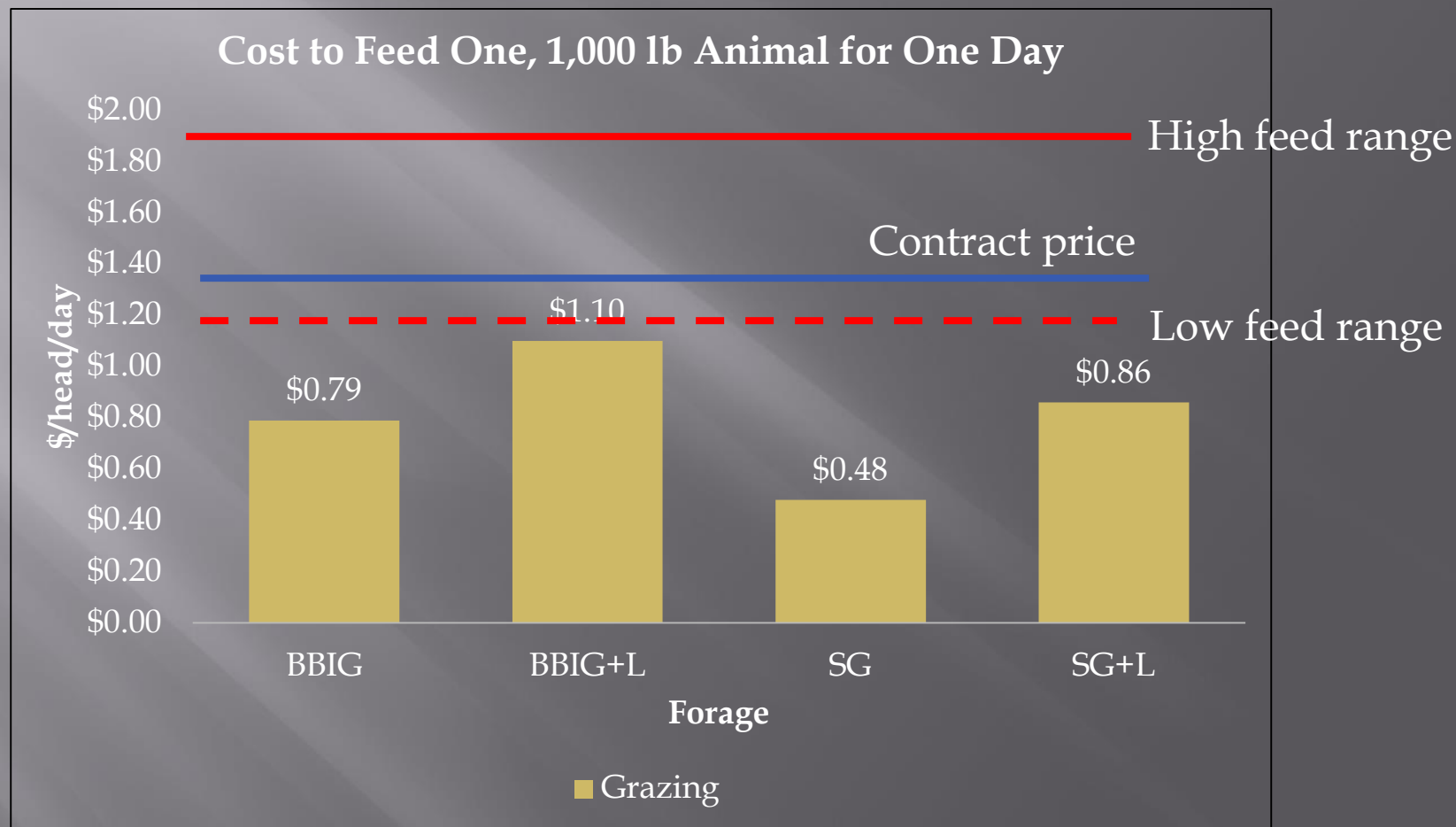
Lowe et al. 2015. Agronomy Journal 107:1733–1740

Bred Dairy Heifer Feed Costs

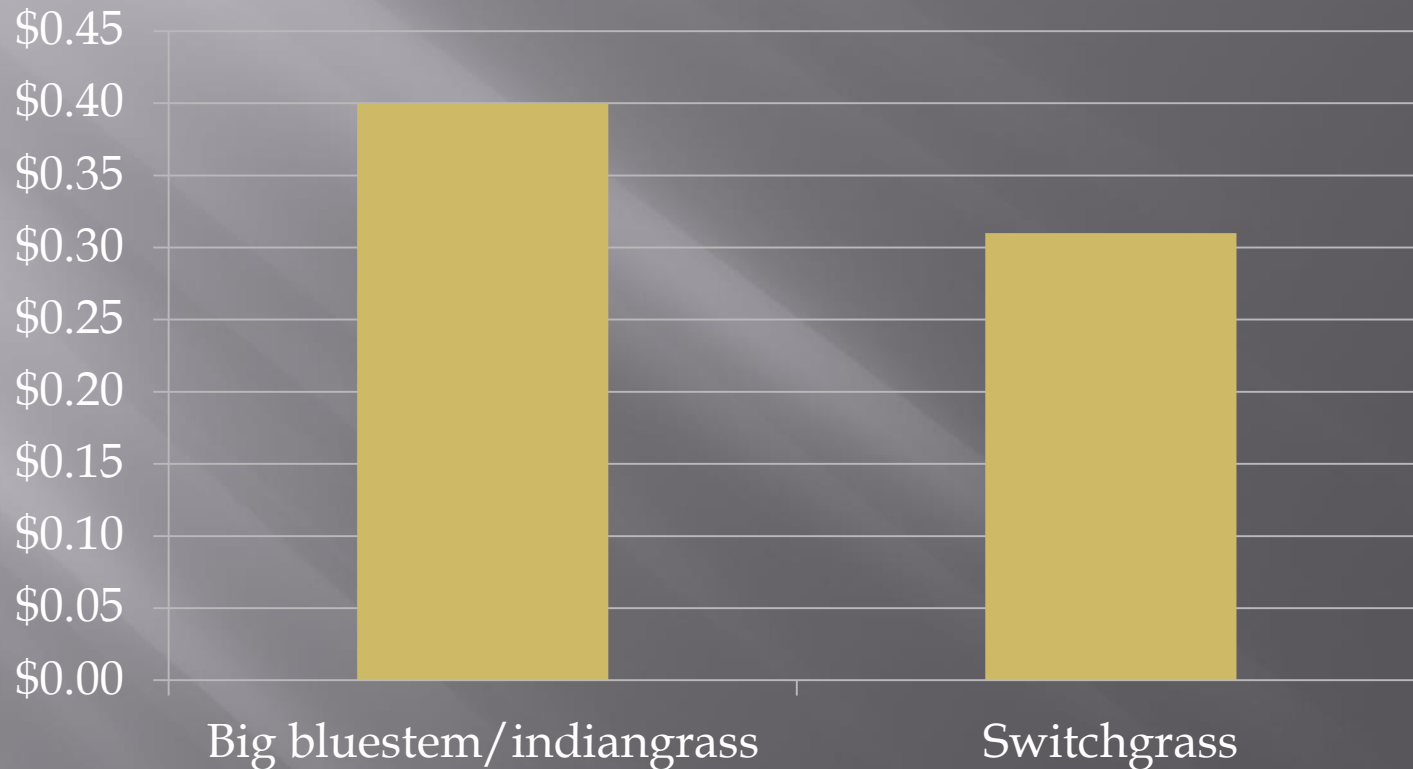


Lowe et al. 2016. Journal of Dairy Science 99:1-10

Grass, Feed Costs, and Contracts for Heifer Development

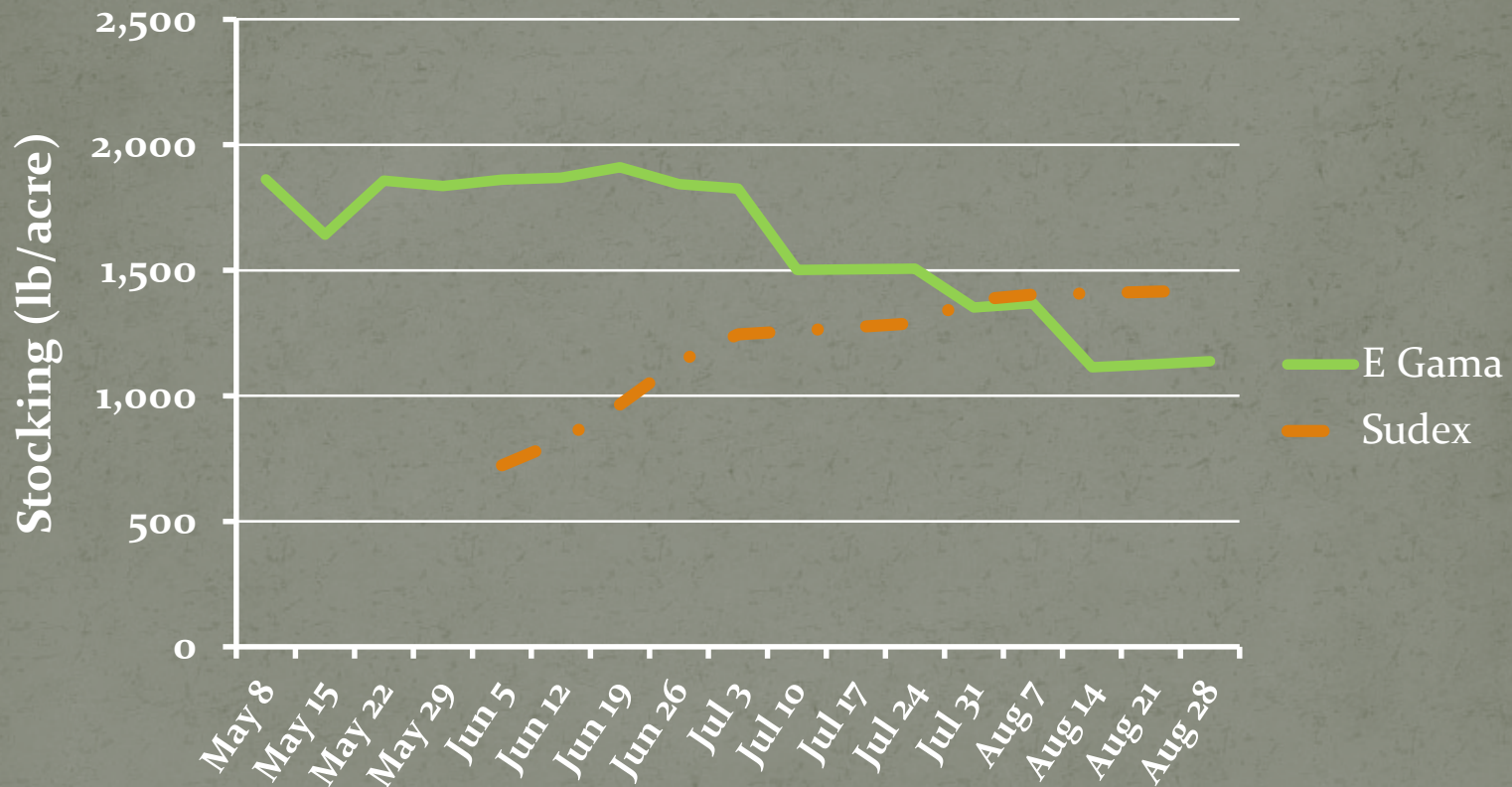


Cost of Gain (\$ per lb) for Grazing Heifers



Keyser et al. 2016. Agronomy Journal 108:373–383

Eastern Gamagrass vs. Sudex



No N applied on pastures for 5 years!

Animal Performance

- No N applied on pastures for 5 years .



Forage	ADG (lb/day)	Grazing Days/ac	Gain (lb/ac)
E. gama	1.15	192	205
Sudex	1.63	81	129

East TN REC, 2013-2015; 909# Angus heifers
Grazing for 112 days (EG) and 65 days (Sudex)

Managing the Building Blocks

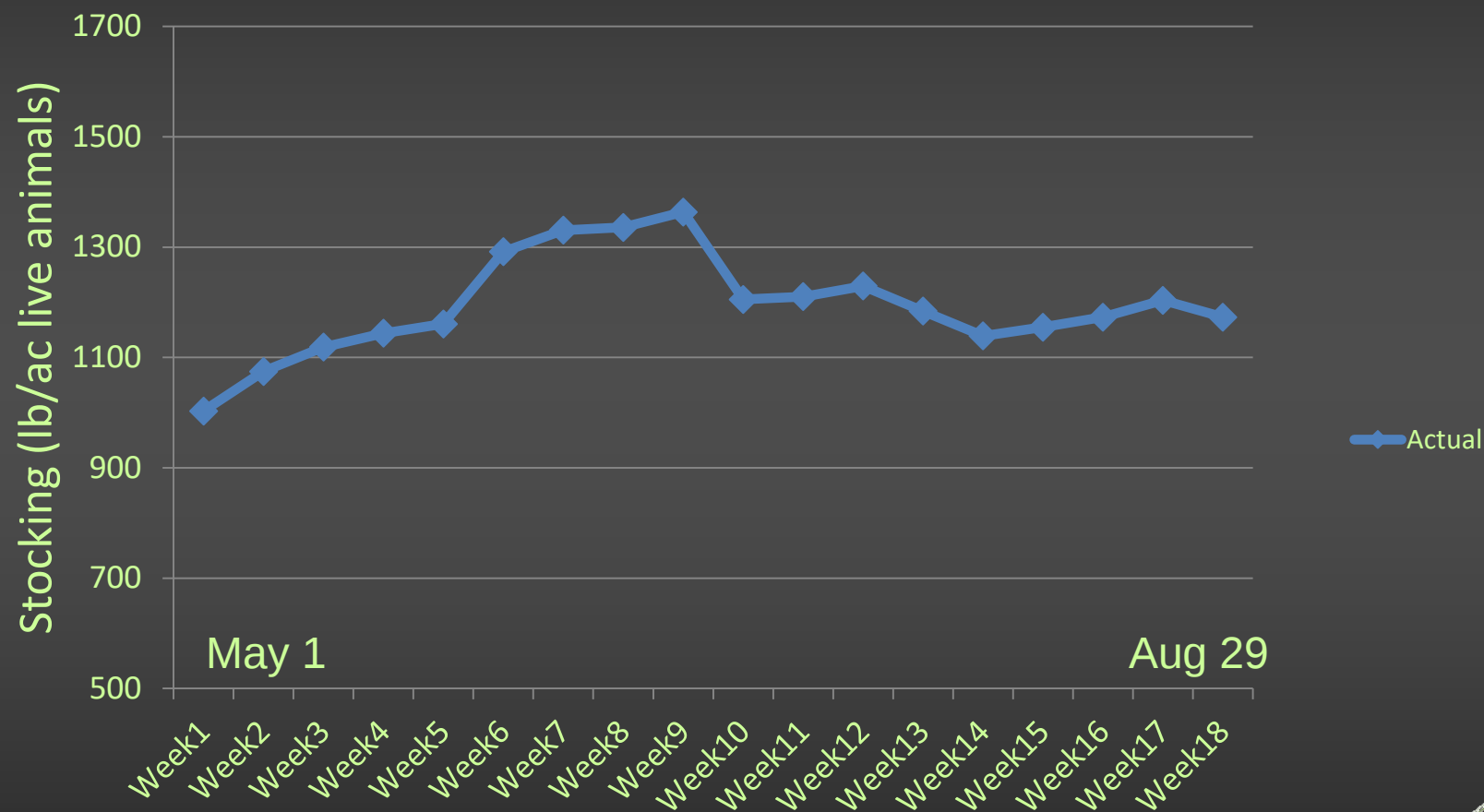


Traditional Recommendation – Rotational Grazing

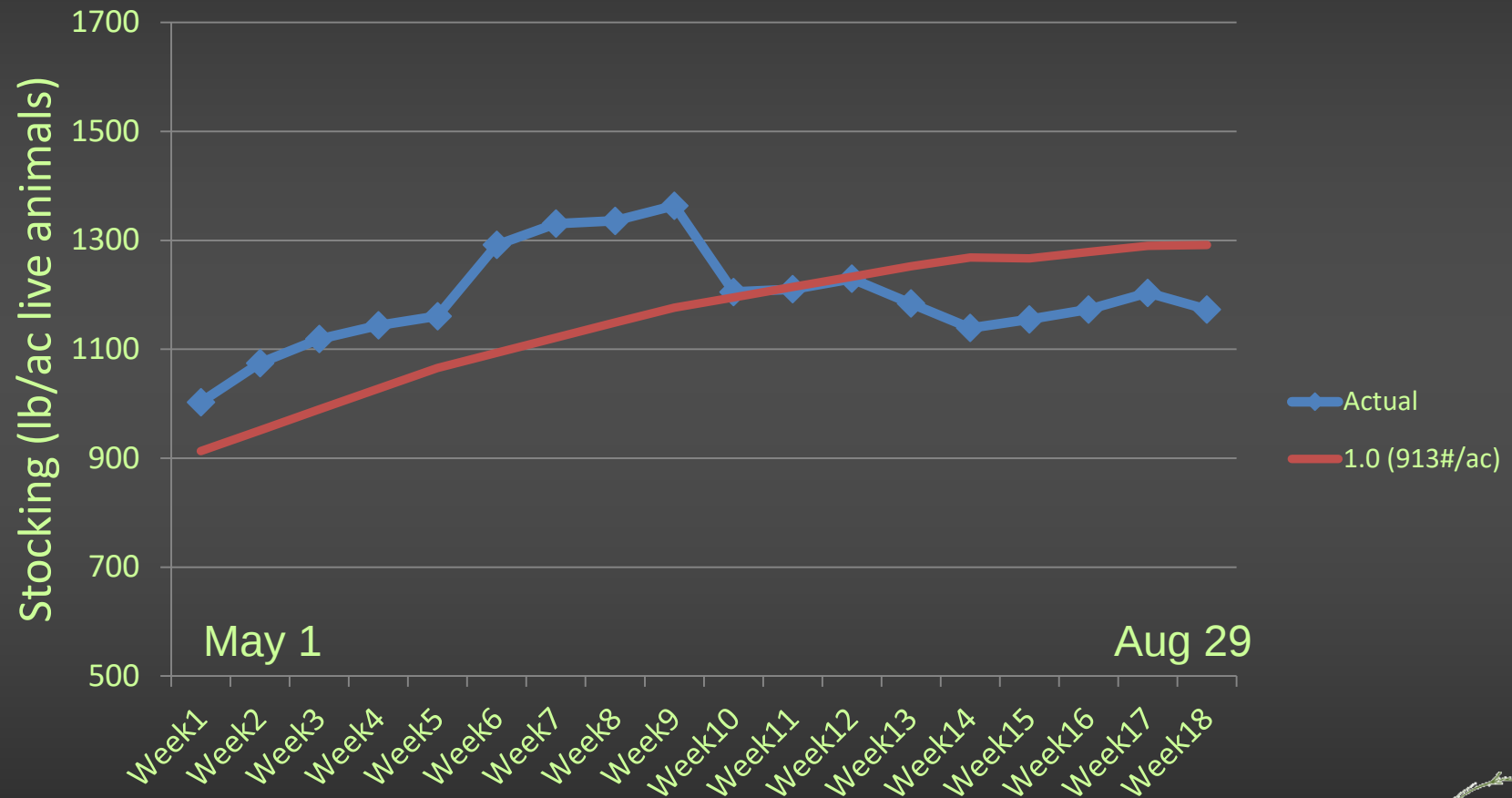


June 23; 17 days post-grazing

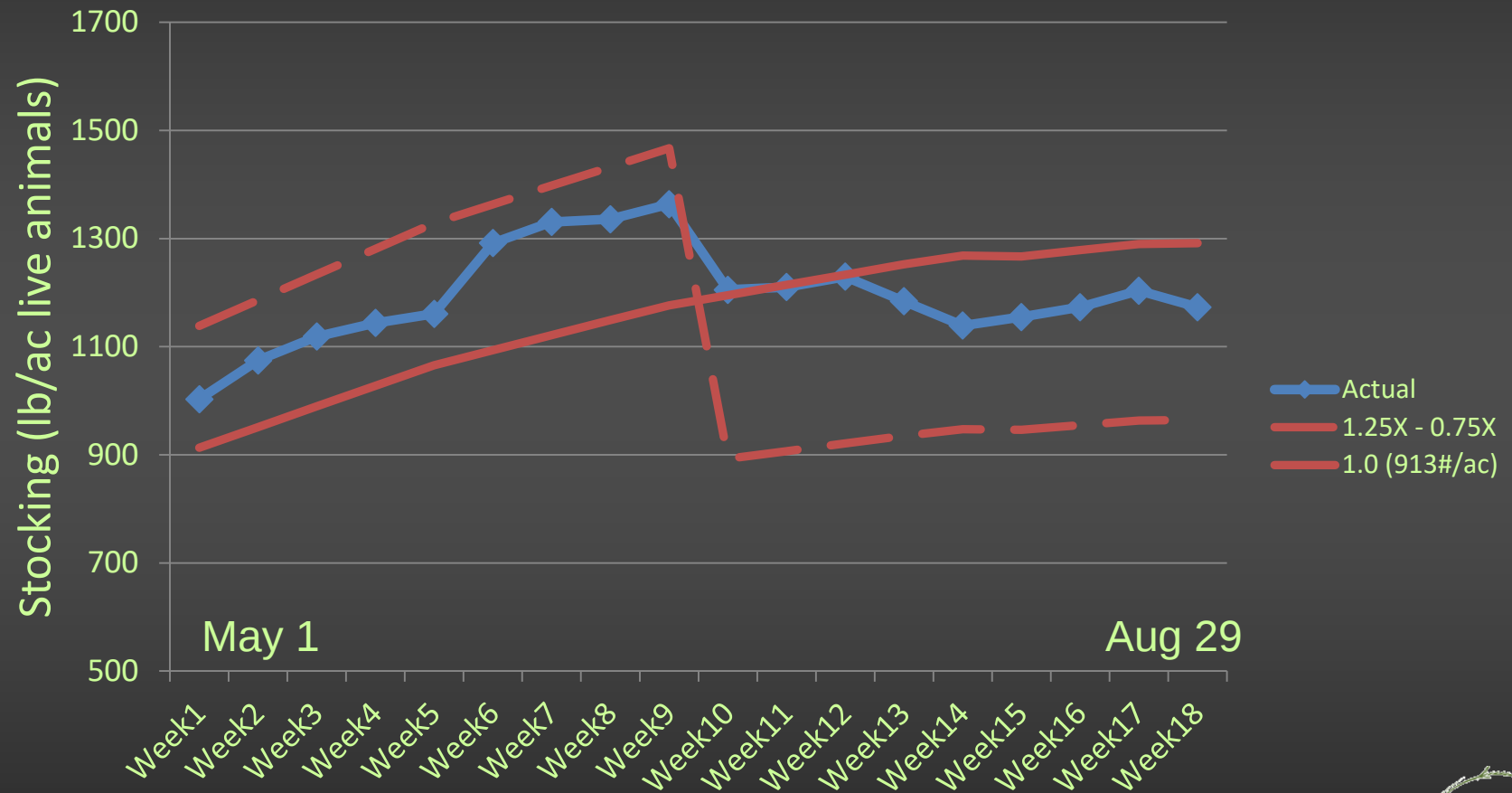
What About Continuous Grazing?



Stocking Strategies?



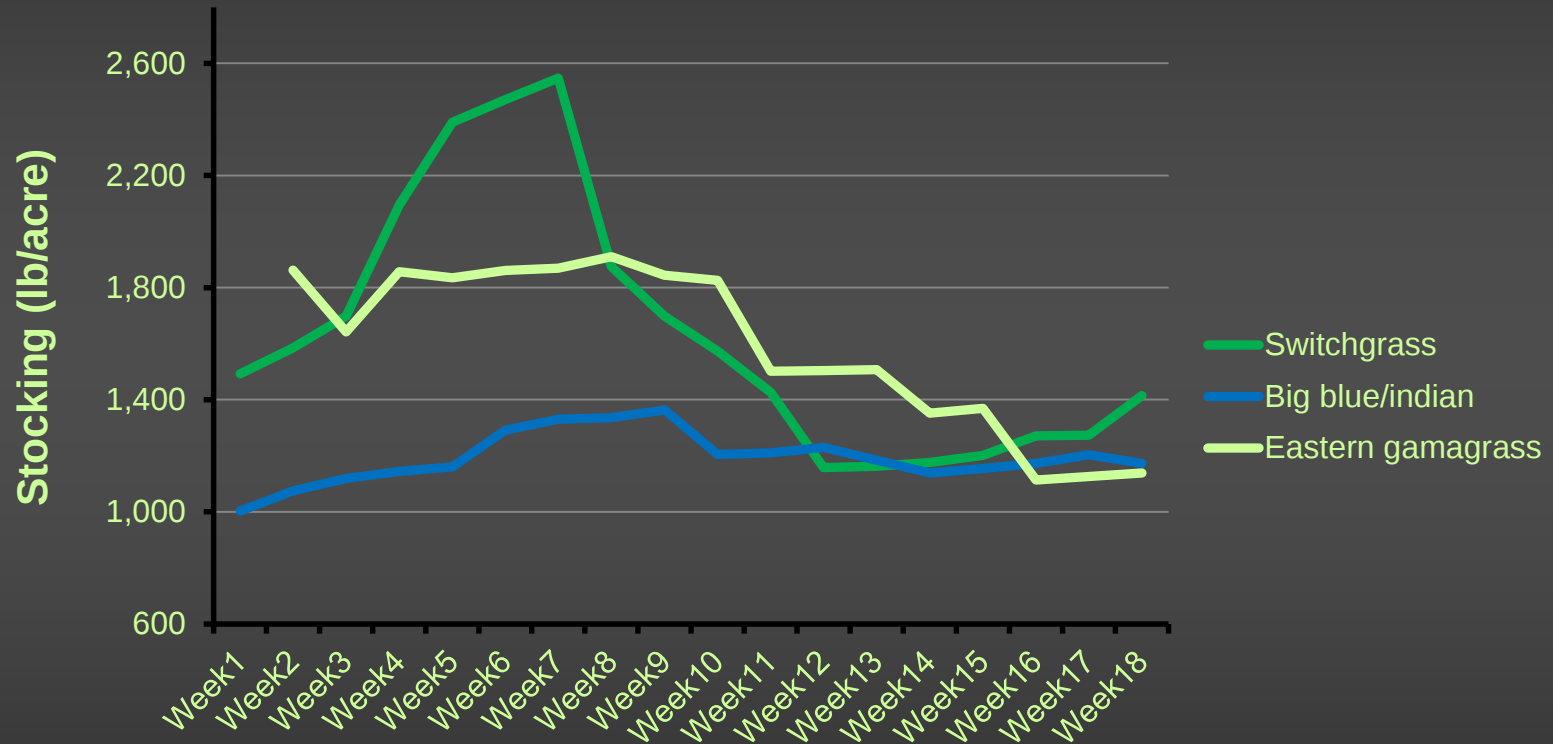
Stocking Strategies?



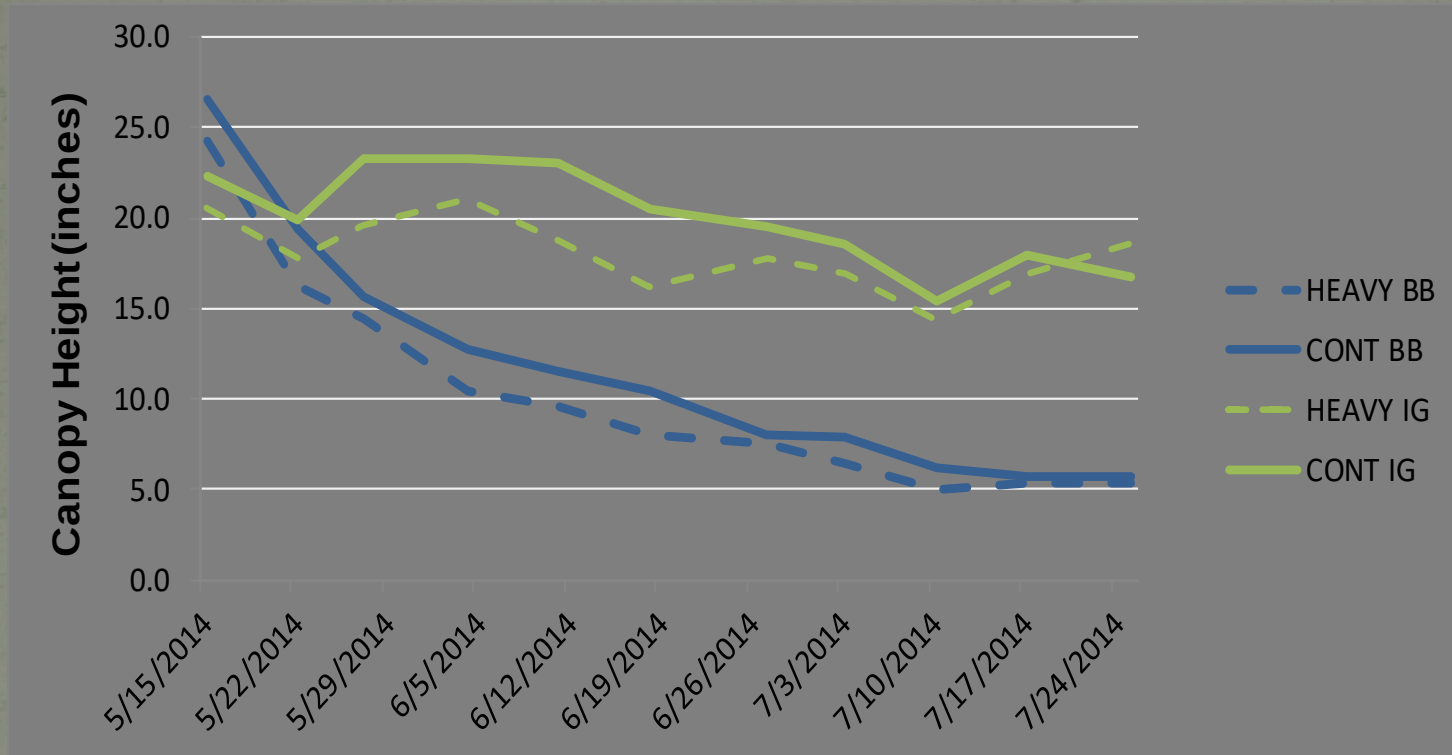
Management the Building Blocks



Managing Stocking



Pasture Condition 2014 (Pilot Study)

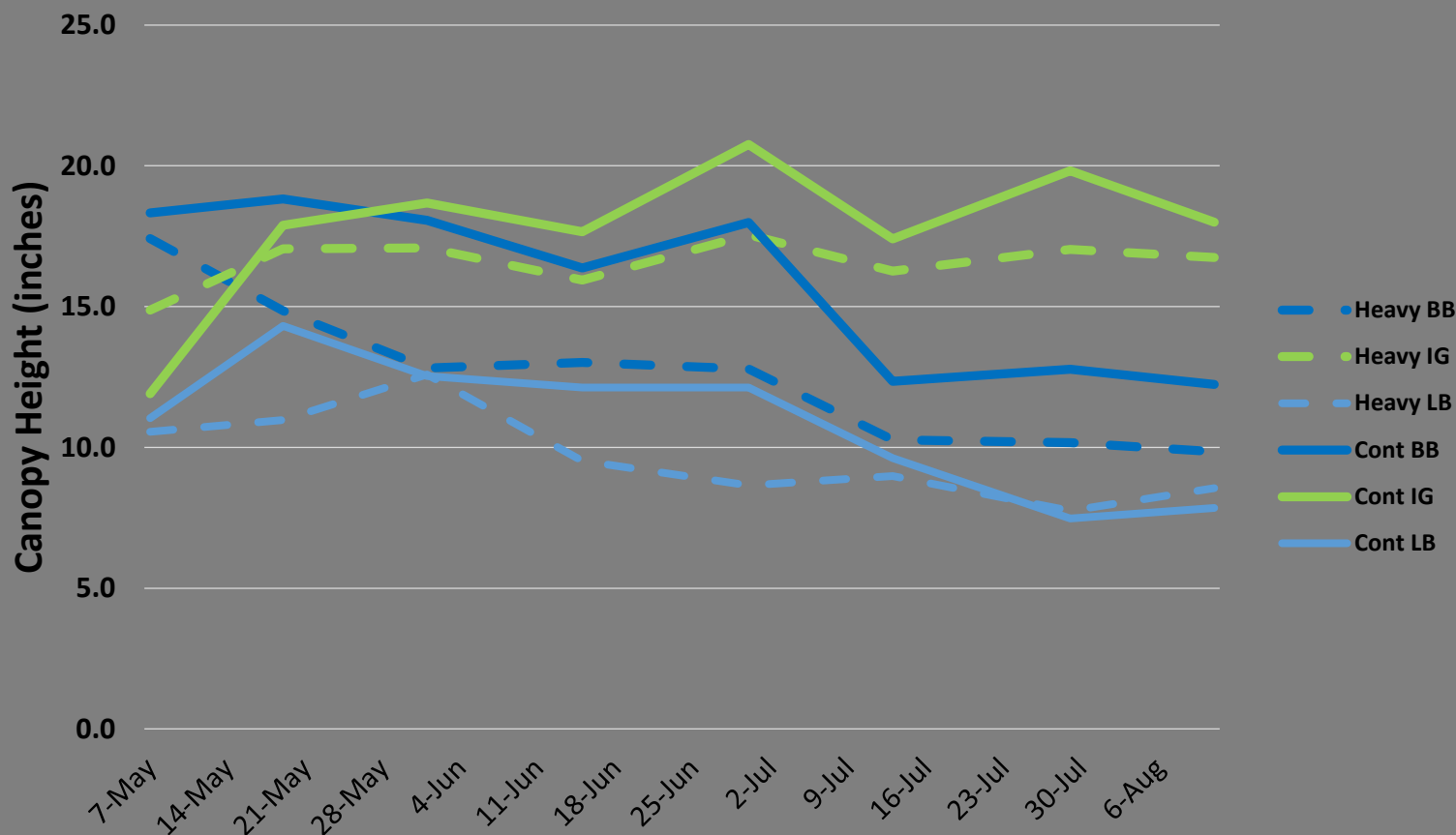


Pasture Condition 2014 (Pilot Study)



Pasture Condition 2015

(85% of 2014 stocking rate)



Pasture Condition...



June :

July 10, 2015

October 6, 2015

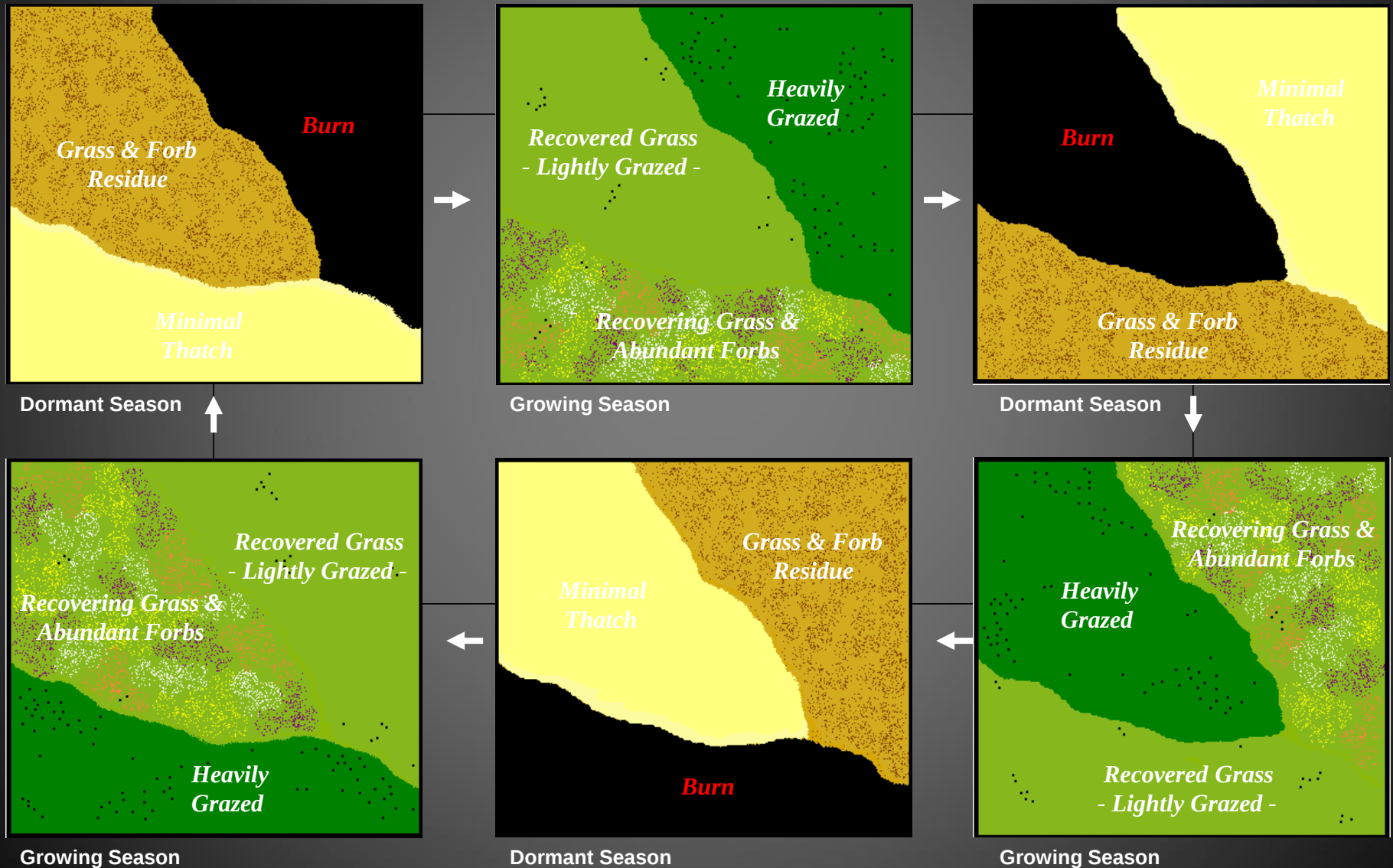
Preliminary Animal Performance – Beef

Grazing Strategy	ADG (lb/day)	Steer Days/ac	Beef/ac (lb)
Continuous	2.05	138	283
Heavy Early	2.07	135	275

* O N/ac applied since at least 2011



Patch-Burn Grazing: A Shifting Mosaic



Patch-burn Grazing



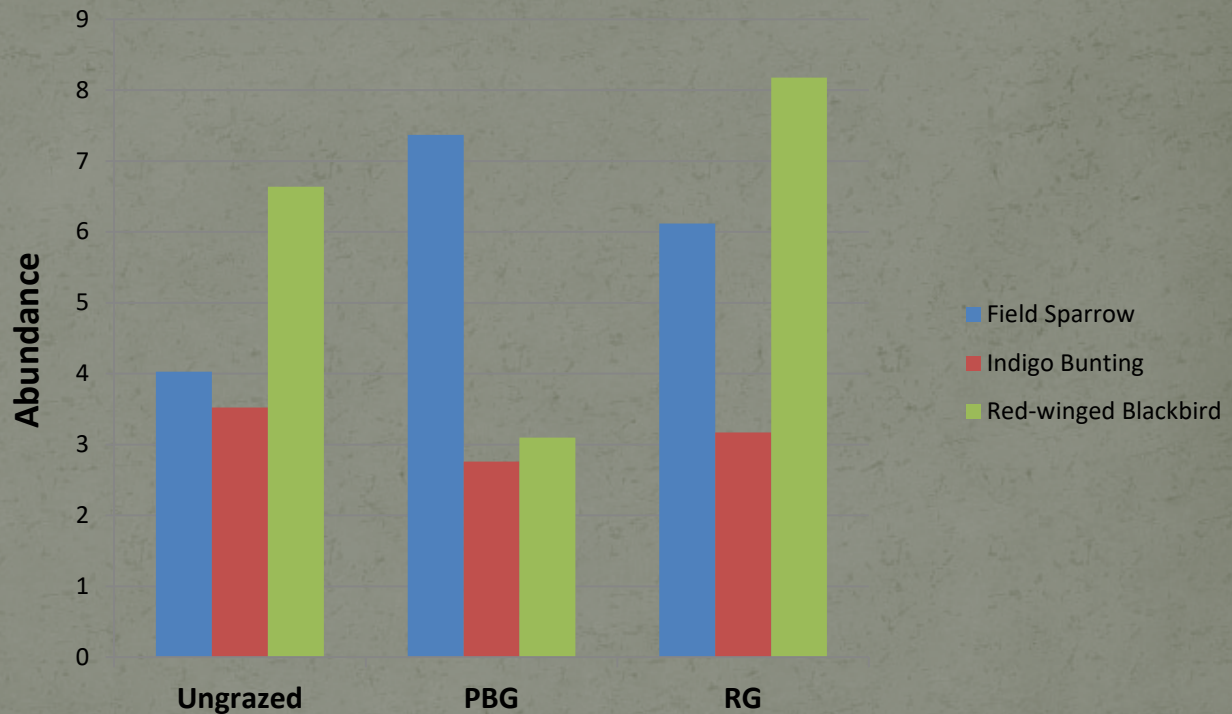
Patch-burn Grazing - Performance

Location	Breed	Animal Class	ADG (lb/day)		Grazing days		Total Beef (lb/ac)	
			PBG	RG	PBG	RG	PBG	RG
BGAD	Angus X	Heifer	2.5	2.3	79	87	198	200
		Steer	-	-			-	-
DREC	Holstein	Heifer	1.61	1.64	109	90	157	140
	Jersey	Heifer	1.36	1.41				
QUICK	Angus X	Heifer	1.69	1.63	63	70	101	113
		Steer	1.52	1.70				

Patch-burn Grazing - Wildlife



Field Sparrow:
70% decline,
1966-2006



Grasshopper
Sparrow:
77% decline,
1966-2006

Flexibility: Timing Forage Availability...



Summary – Native Grass Forages

- Perennial, drought tolerant, summer pasture
- Excellent gains and are suitable for
 - Backgrounding
 - Stockering
 - Heifer development
 - Drought “insurance” for cow-calf operations
 - Improved weaning wts for cow-calf (spring) operations???
- Cost-effective
- Can be managed relatively easily with various strategies



The End of the Matter...

- Natives can supplement cool-season forages
- Start small with pastures that need to be reseeded, unproductive odd areas, or marginal ground

Questions?

Planted April 20, 2012,
10 PLS lb/ac BB (6)/IG(3)/LB(1)
picture taken Sept 28, 2012



Questions?