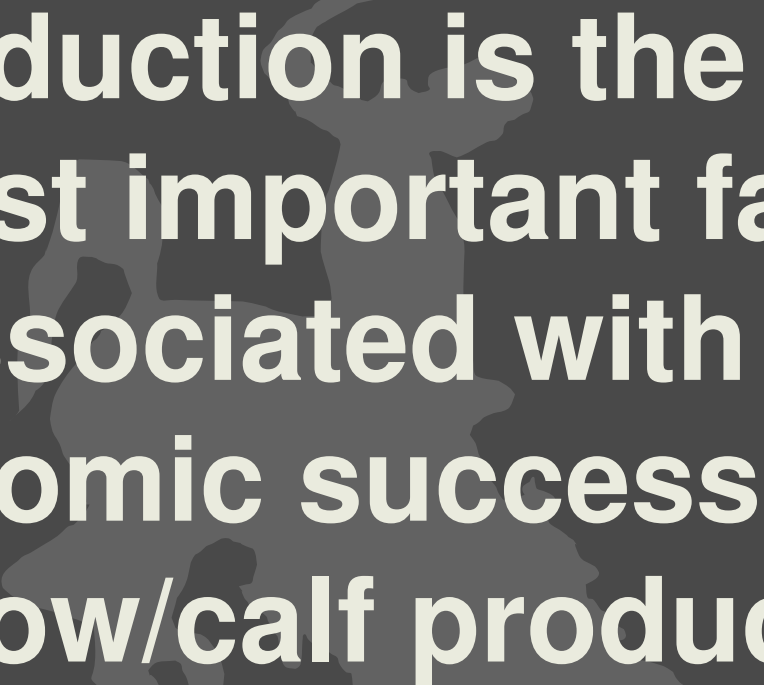


A dark gray silhouette of a cowboy riding a horse, positioned in the background of the slide. The cowboy is wearing a hat and is riding a horse that is facing right. The silhouette is centered horizontally and vertically behind the main text.

NUTRITIONAL INFLUENCES ON REPRODUCTION: ENERGY AND PROTEIN

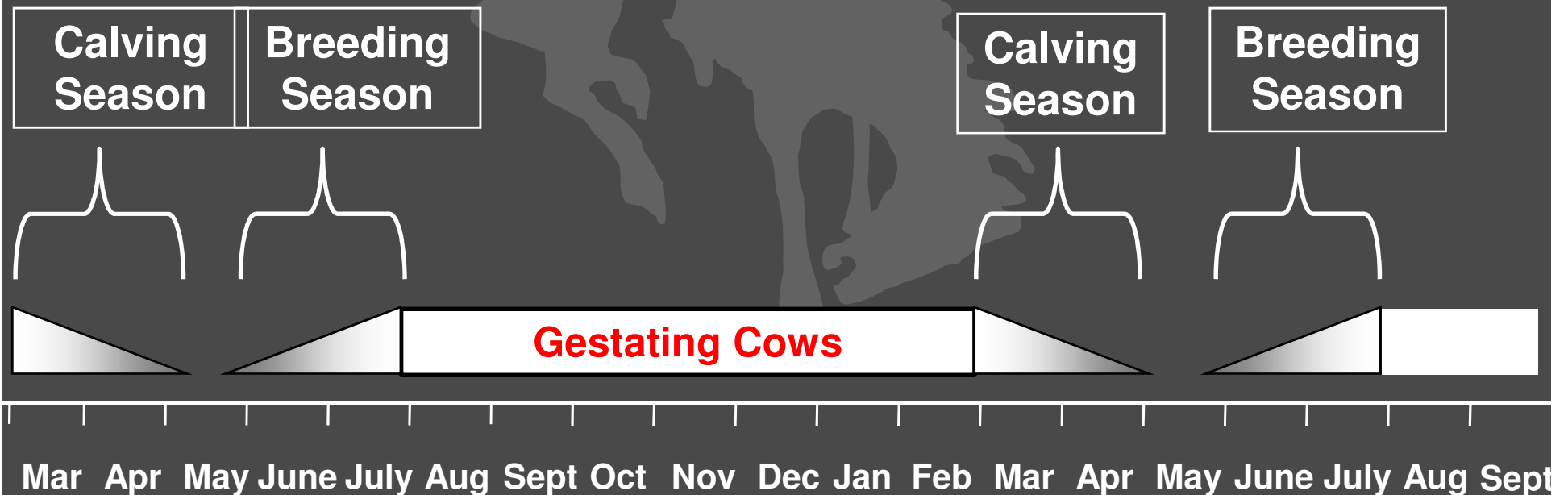
Scott Lake, Beef Cattle Extension Specialist
Department of Animal Science, University of Wyoming



**Reproduction is the single
most important factor
associated with the
economic success of the
cow/calf producer**

Management cycle of a beef cow

- To have 1 calve every 365 days, a cow has ~83 days from calving to conceive.
- The interval of postpartum anestrus will dictate if she can accomplish this



Factors that affect the postpartum interval

- The postpartum interval is dependent upon many factors and is very difficult to predict.

-Nutrition

-Age

-Calving difficulty

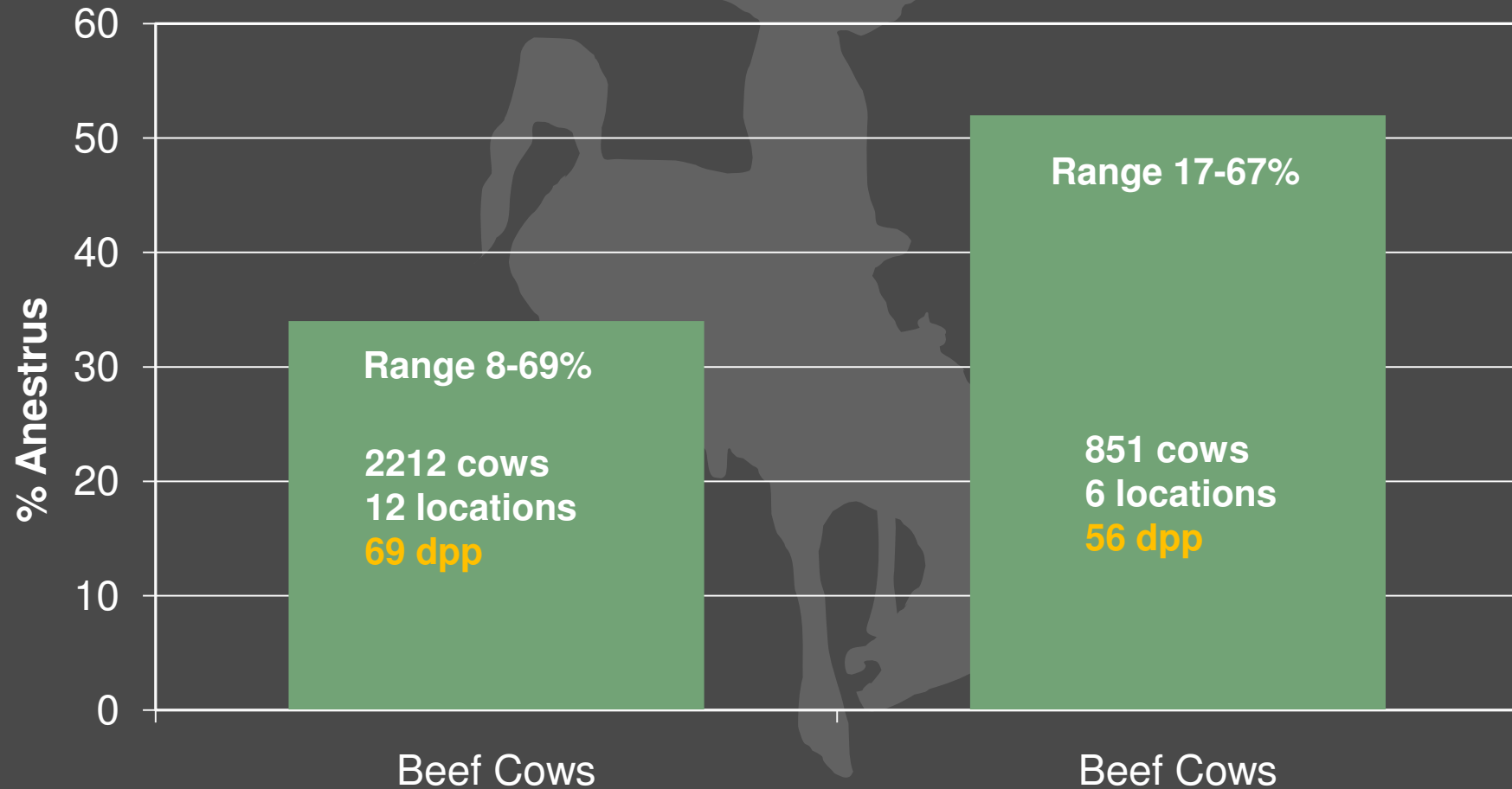
-Calving season

-Genetics

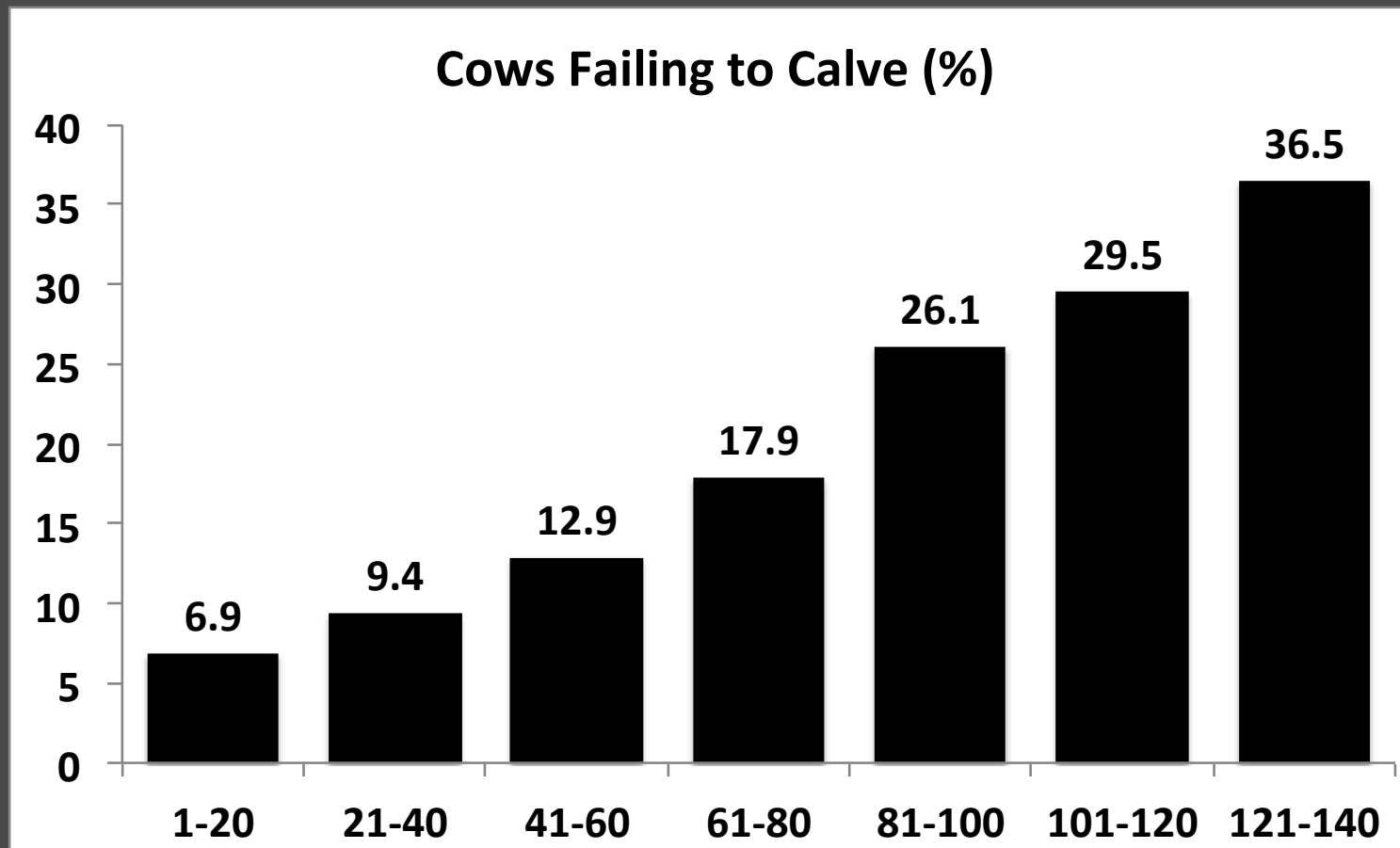
-Suckling of calf

-Body Condition (fatness)

Anestrus in US beef cattle at start of synchronization



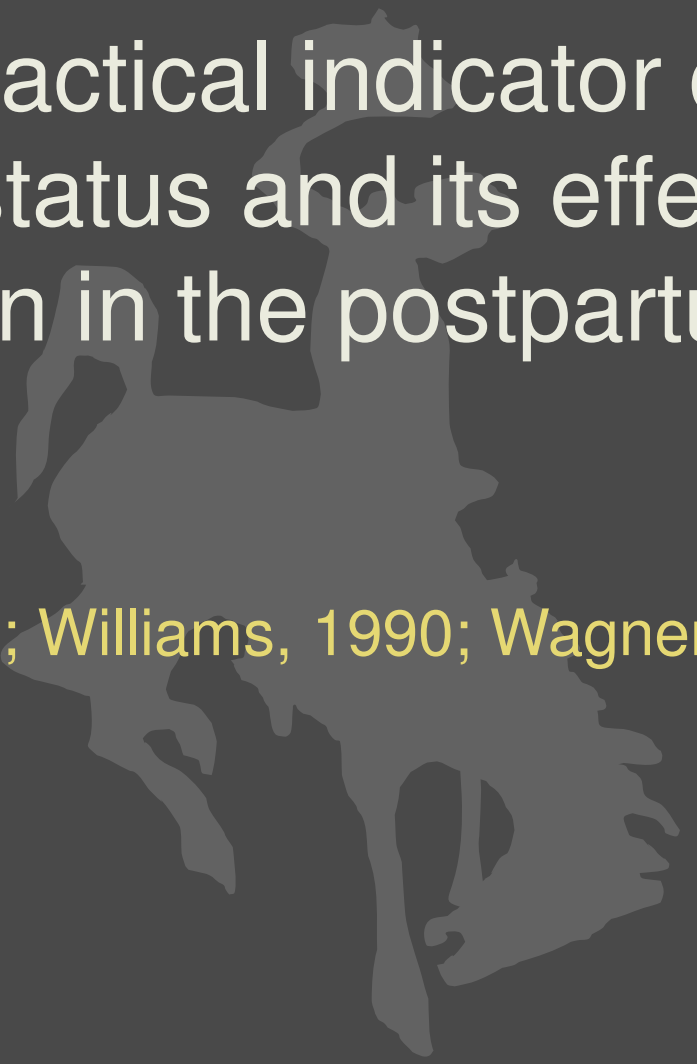
%



Effect of calving date on the number of cows calving the following year (adapted from Burris and Priode, 1958)

Factors effecting reproduction in beef cows

- #1 is Nutrition
 - Fat reserves (BCS) at calving and start of the breeding season
 - Weight loss between calving and breeding = long PPI
- Recommendations:
 - Mature cows: BCS 5 - 5.5 at calving and maintaining this BCS during the breeding season
 - 2 year-old cows: BCS 5.5 - 6 at calving and maintaining this BCS during the breeding season



BCS is a practical indicator of nutritional status and its effect on reproduction in the postpartum cow

Short et al., 1990; Williams, 1990; Wagner et al., 1988; Randel, 1990

Body Condition Scores

- 1 - Emaciated
- 2 - Very thin
- 3 - Thin
- 4 - Moderately thin
- 5 - Moderate (ideal)
- 6 - Moderately fleshy
- 7 - Fleshy
- 8 - Very fleshy
- 9 - Obese

BCS Examples

BCS 3: Too Thin



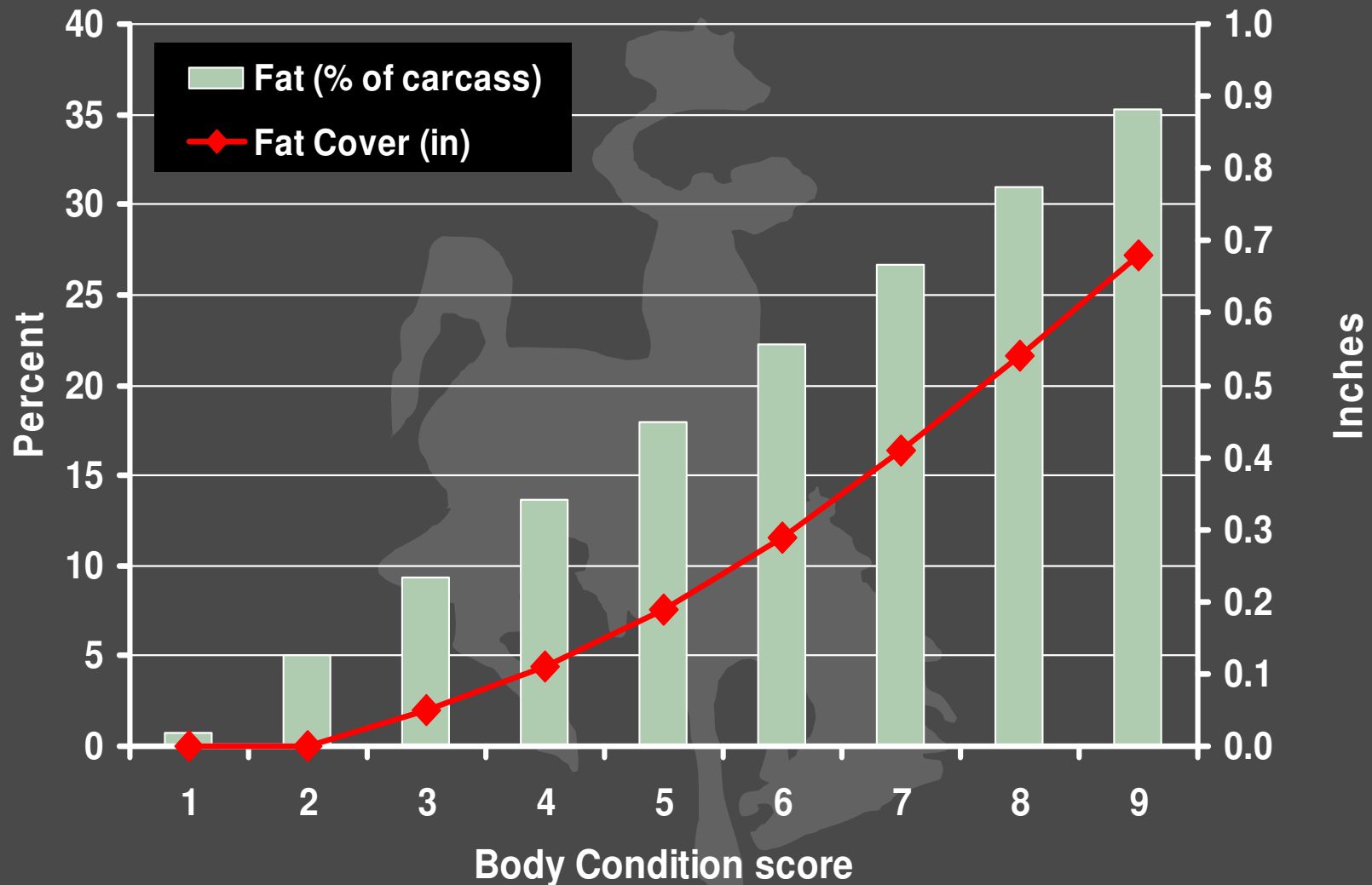
BCS 5: Ideal



BCS 8: Too Fat



Estimates of body fat in beef cows relative to body condition score



Energy Reserves and Reproduction

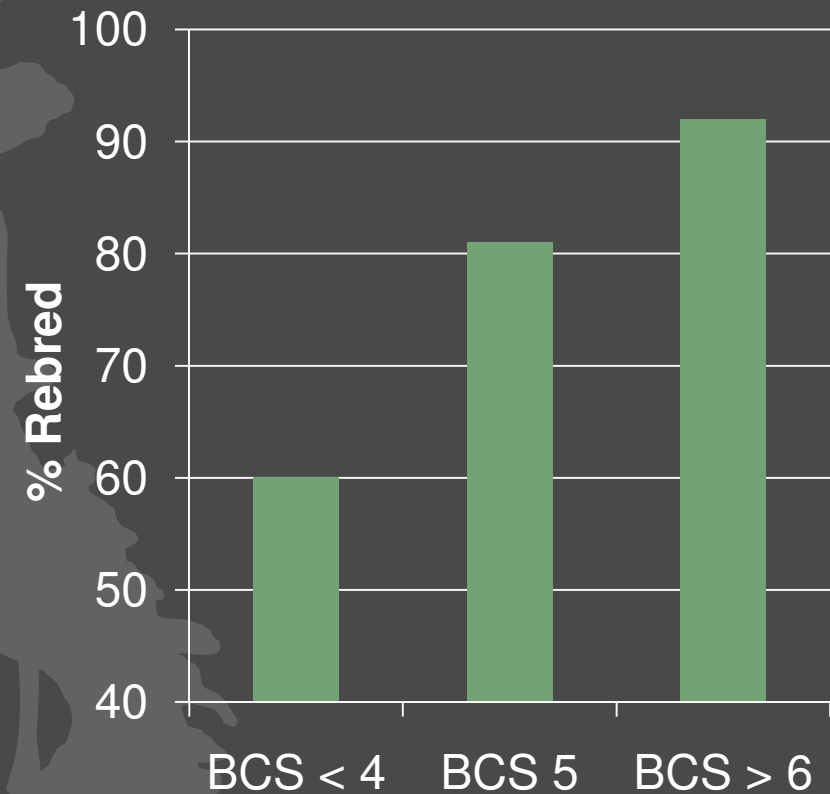
- Rapid weight gain is difficult after calving
 - especially late calving cows
 - need to reach target by calving
- Cows in good to moderate BCS
 - can lose some weight (BCS) after calving
- Thin cows at calving
 - must have ↑ postpartum E
 - Economics (sell or feed?)

BCS and the postpartum interval

Effect of body condition score (BCS) at calving on postpartum interval.

BCS	Postpartum Interval
3	88.5
4	69.7
5	59.4
6	51.7
7	30.6

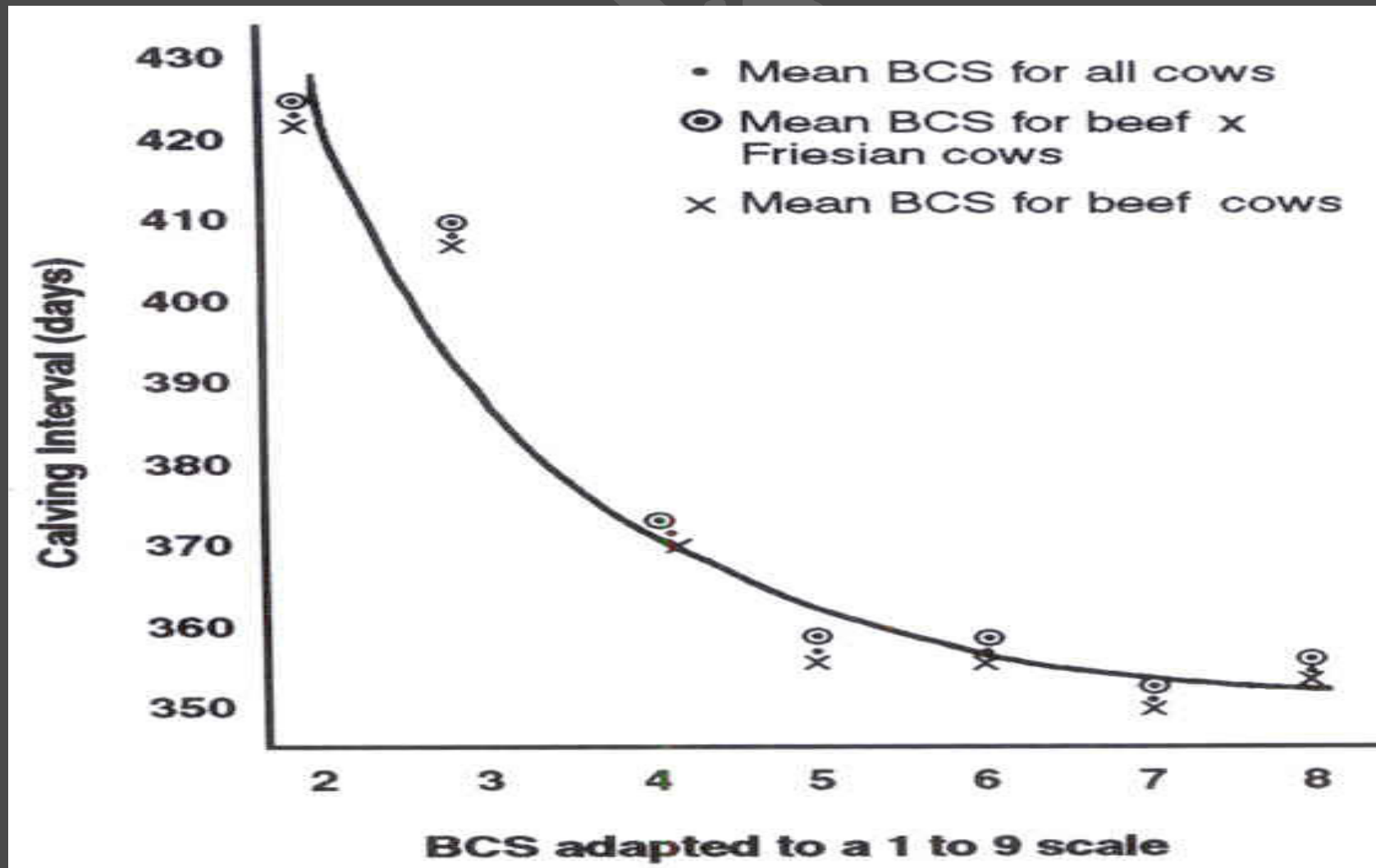
Adapted from Houghton et al., 1990



Adapted from G. Selk,
Oklahoma State Univ.

Relationship of BCS with Calving Interval

(Adapted from Kalkenny, 1978)



ERROR: stackunderflow
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