

PATCH-BURN GRAZING

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Patch-burn grazing (PBG) is a grassland management practice designed to benefit wildlife habitat and livestock production through the application of prescribed fire to focus livestock grazing on a portion of a grazing unit with the objective of increasing vegetation diversity and structure. PBG creates an ever-changing mosaic of heavily and lightly grazed and ungrazed areas, thereby increasing vegetation structure and diversity on a single grazing unit. This practice is indicated where either long-term fire suppression or repeated annual burning have decreased species richness and structural heterogeneity.

PBG appears to be a sustainable grazing system that does not require costly interior fencing or intensive management. Generally, one-third of each grazing unit is burned annually in rotation. Post-fire regrowth attracts cattle to burned areas. Concurrently, the remainder of the unit receives light, patchy grazing, allowing rested plants to build structure and root mass. Livestock production data indicate PBG results in cattle weight gains that are competitive with other traditional management practices.

PBG enhances habitat for greater and lesser prairie chicken, bobwhite quail, Henslow's sparrow, and other grassland nesting birds by providing critical nesting and escape cover while discouraging woody encroachment. PBG also appears to positively impact nectar-producing plants and their pollinators, including bees and butterflies.

Our goal is to summarize PBG in the plains states and to highlight real ranch experiences. In an effort to find the status of PBG acceptance, we reviewed NRCS standards and publications by states. Of the 17 central states, only 4 referenced PBG.

Case Study Example

The Homestead Range Renewal Initiative (HRRRI) is a landowner-sponsored initiative on 2,900 acres of a Kansas Flint Hills cattle ranch. HRRRI's purpose is to implement new management techniques to enhance wildlife habitat on rangelands grazed by livestock. The objective is to develop a successful model that will be implemented by other ranchers.

In 2003, Jane Koger, owner of the Homestead Ranch, began this project, which is thought to be the first privately sponsored initiative to systemically apply these techniques and monitor their impact. The experimental portion began in 2004 and will conclude in 2010.

Monitoring activities during the experimental program include annual spring breeding bird survey, butterfly and nectar producing plant inventory, fixed-point photography and vegetation analysis, and cattle production data collection.

The technique is being tested under three grazing scenarios: (1) double-stock (IES) yearling stocker cattle (April-July); (2) full season yearling stocker cattle (April-October); (3) year-round cow/calf.

The project also includes tree and fence removal to create larger grazing units with less habitat fragmentation.



Homestead Ranch burns one-third of each grazing unit annually in spring. Studies elsewhere are examining the impact of different patch sizes and timing of burns.



Key results of the PBG monitoring:

- Competitive livestock weight gains
- Reduction of erosion along fences and other cattle trails
- Wildlife and biodiversity benefits, including sensitive insects and native pollinators

Additional research needs:

- Specific ecological impacts and benefits
- Effect of fire variables: perimeter or point ignition, direction, intensity, time of year
- Applicability in other climates and regions

Central States 2007-2008

State	Technique, Voluntary or Practice Standard	Version Date	Comments	State	Technique, Voluntary or Practice Standard	Version Date	Comments
AR	Standard does not reference patch burning	June, 2009	Does not make out patch burning and grazing as part of prescribed burning standard	AR	Standard does not reference patch burning	March, 2001	Does not make out patch burning and grazing as part of prescribed burning standard
IL	Standard does not reference patch burning	February, 2000	Does not make out patch burning and grazing as part of prescribed burning standard	NE	Standard does not reference patch burning	December, 2000	Does not make out patch burning and grazing as part of prescribed burning standard
IA	Practice mentioned as an alternative to the prescribed burning standard	June, 2002	"Prescribed burning is a management option that can be used to improve soil health, reduce erosion, and control weeds. Other uses of fire include patch burning and grazing as part of prescribed burning standard." "Patch burning is a management option that can be used to improve soil health, reduce erosion, and control weeds. Other uses of fire include patch burning and grazing as part of prescribed burning standard."	ND	Standard does not reference patch burning	February, 2008	Does not make out patch burning and grazing as part of prescribed burning standard. The "STANDARD STATE" section reads: "Prescribed burning is the primary means for fire control. However, use of fire for other purposes, such as patch burning, is not mentioned in an order to comply with the standard."
IN	Standard does not reference patch burning	December, 2004	Does not make out patch burning and grazing as part of prescribed burning standard	OK	Range OK-16	February, 2007	Does not make out patch burning and grazing as part of prescribed burning standard
KY	KS Range 758 & KS-14	August, 2006	Standard patch burn grazing as a management option. It is currently intended as providing status cover habitat for wildlife	SD	Standard does not reference patch burning	March, 2000	Does not make out patch burning and grazing as part of prescribed burning standard
LA	Standard does not reference patch burning	October, 2005	Does not make out patch burning and grazing as part of prescribed burning standard	TX	Standard does not reference patch burning	February, 2007	Does not make out patch burning and grazing as part of prescribed burning standard
MI	Standard does not reference patch burning	February, 2001	Does not make out patch burning and grazing as part of prescribed burning standard	WI	Standard does not reference patch burning	March, 2007	Does not make out patch burning and grazing as part of prescribed burning standard
MO	Patch Burn Grazing Conservation Practice Addendum (See 22-200-0000)	July, 2004	Identifies that patch burn grazing is a management option that can be used to improve soil health, reduce erosion, and control weeds under traditional grazing management in the dry state.				

Utilizing fire and grazing to enhance the diversity of native flora species and structure across a grazing unit creates suitable habitat to support a corresponding increase in faunal biodiversity.