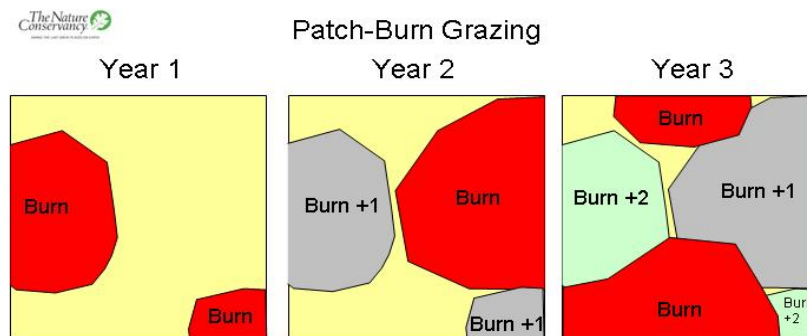


## Patch Burn Grazing: Benefits for both Wildlife Habitat and Livestock Performance

### Description

Patch burn grazing is a system that encourages intensive grazing on a portion of a pasture each year while resting the remainder of the pasture. Each year, a portion of the pasture is burned (the burn “patch”), which attracts grazing cattle to the lush re-growth of grass following the fire. Cattle graze the burned portion of the pasture until a new portion is burned - usually the following year. In times of hot dry weather or cool wet weather, when grass growth slows, cattle will "spill over" into the previous year's burn and graze lightly until the current year's burn catches up again. The extent to which the cattle spill over into the previous year's burn is determined by stocking rate – they will spill over more under higher stocking rates, and less under lower stocking rates.

The location of the next burn is determined by the amount of fuel available for the fire. That fuel includes dead grass, either standing or laying on the ground. After the fire, cattle graze the burned patch for the entire season, essentially overgrazing that portion of the pasture. However, as soon as the next portion of the pasture is burned, the cattle will shift their grazing pressure to the new burn. Then, over the next several years (until the next burn), the recently-grazed area will rest and recover its vigor.



- Entire site is grazed at moderate stocking rate.
- A patch is burned each year (determined by fuel load).
- Burned patches get intense grazing first year, light/moderate grazing second year, and very little grazing third year.

One of the unique features of patch burn grazing is that cattle select their forage differently than in other grazing systems. In patch burn grazing, the vast majority of the forage eaten by the cattle is grass, excluding many of the legumes and other forbs (broad-leaved plants) that are normally eaten. Patch burn grazing ensures that cattle can have complete free choice of forages, because their movement is not restricted within the pasture, and if their first choice is not available in the burned patch, they can go outside that area to find what they want. This is a difference between patch burn grazing and traditional rotational systems, where cattle are restricted to a portion of a pasture by

fencing, and it ensures that cattle can maximize the quality of their forage intake at all times.

### **Habitat Benefits of Patch Burn Grazing**

The cycle of intense grazing pressure and long rest periods in patch burn grazing creates excellent vegetation structure for a large variety of wildlife species. Recently burned patches provide short vegetation because of the recent fire and the intense grazing. This short vegetation, particularly in the spring and early summer, provides excellent habitat for many grassland-breeding birds, as well as for migrating sandhill cranes and other wildlife species.

In the patch burned during the previous year, grasses are slowly recovering their vigor. In the meantime, the forbs which were ungrazed during the previous year take advantage of the open spaces left by the weakened grasses. They increase their abundance by seed and rhizome (underground stems). That reproduction is accompanied by other forbs, including some annual weeds, taking advantage of the open spaces between the temporarily-weakened grass. This weedy cover provides ideal (and unique) habitat for upland game birds like pheasants and quail. Young birds need the safety provided by the vertical cover (tall forbs), but can't move through dense grass near the ground. The thin grass and tall forbs in the year following the burn provides perfect brood-rearing habitat for these species. Many other wildlife species also benefit from the habitat and food quantities provided by the vegetation response to the fire and grazing.

In the remainder of the pasture, where little grazing has occurred for 2 or more years, the grasses and other plants grow tall and thick. This provides dense vegetation for wildlife habitat, including excellent nesting and wintering habitat for species such as pheasants and quail. It also provides adequate fuel for the next fire, and ensures that the fire will burn with sufficient intensity to kill trees such as eastern red cedars.

### **Plant Diversity Impacts**

While the impacts on the plant community are still being tested, it appears that plant diversity increases through the patch burn grazing system. Because grasses are the preferred forage for the cattle, forb abundance increases, adding to the overall diversity of the pasture. Altering the season of fire can also impact the plant community, with late spring fire suppressing cool-season grasses and early spring or fall fires favoring cool-season grasses over warm-season grasses.

### **Livestock Performance**

Oklahoma State University has done multiple comparisons of livestock performance between the patch burn grazing system and other common livestock systems. Using stocker cattle, no differences in weight gains were found between patch burn grazing and other systems. Cow-calf pairs are now being tested as well, and early results indicate no differences in performance between patch burn grazed sites and other grazing systems. In addition, a stocking rate that is sustainable long-term on most common grazing systems can also be applied to patch burn grazing, so there is no need to reduce cattle numbers when switching to patch burn grazing.

**For more information on patch burn grazing or other conservation strategies, call Tim Tunnell with the Platte Habitat Partnership at (308) 583-2294, or Chris Helzer with The Nature Conservancy, at [chelzer@tnc.org](mailto:chelzer@tnc.org) or (402) 694-4191.**