NO PREP

# Grasslands

## Where Grasses Rule the Landscape

**Includes:** Student reading, case study, differentiated questions, teacher key

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Name: Period: Date:

# Grasslands: Where Grasses Rule the Landscape

**Moderate Rainfall, Few Trees**

Grasslands cover expansive areas where grasses dominate and trees are sparse. They thrive in climates too dry for dense forests yet moist enough to support more life than deserts. Two main types are prairies (in temperate zones) and savannas (in tropical regions). Prairies, like those in the Midwestern USA, have cold winters and warm summers, while savannas, found in parts of Africa and South America, feature pronounced wet and dry seasons. Periodic fires and grazing by large herbivores (bison, wildebeest) shape grasslands, recycling nutrients and preventing excessive woody growth. These fires, often ignited by lightning, create a mosaic of habitats, boosting biodiversity. Modern interventions, such as fire suppression, can disrupt these cycles and let woody shrubs or invasive species replace native grasses.

**Ecological Importance**

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### Ecological Importance

Despite appearing simple, grasslands host diverse flora and fauna. The thick root networks of perennial grasses stabilize soils, reduce erosion, and help store carbon underground. This makes grasslands valuable carbon sinks, particularly when well-managed. Large herbivores graze on the grasses, while predators like lions, cheetahs, or wolves keep populations in check. Migratory birds often rely on grasslands for breeding and feeding, highlighting the biome's global importance for avian species. Human activities have transformed many grasslands into agricultural regions, as the rich, fertile soils (like the mollisols of North American prairies) excel in crop production. Yet, over-plowing and overgrazing can degrade soil structure, triggering dust storms or desertification. Balancing productive agriculture with the conservation of native grassland ecosystems remains an ongoing challenge.

**Agriculture and Grazing**

Grasslands have long supported livestock, from cattle ranching in the Great Plains to pastoralism in the African savannas. Well-managed grazing systems can mimic natural herbivore movements, preventing overuse of any one area. Techniques like rotational grazing, rest-rotation, and controlled burns can maintain grassland health and biodiversity. Cultivating grains—wheat, corn, sorghum—has also turned prairies into key global breadbaskets. However, intensive monoculture can reduce habitat diversity and exhaust soils if not paired with sustainable practices. Restoring native grasses or creating grassland buffers around fields can help preserve wildlife corridors and pollinator habitats.

**Key Information: Quick Reference Table**

| Grassland Type | Climate | Example Locations |
|---|---|---|
| Prairie | Temperate, cold winters | Central USA, Canadian Prairies |
| Savanna | Tropical, wet/dry seasons | East Africa, parts of South America |
| Steppe | Semi-arid, lower rainfall | Central Asia, Mongolia |

**Case Study Excerpt (Savanna Conservation in East Africa)**

**In Tanzania's Serengeti, the savanna teems with wildebeests, zebras, and predators like lions. Annual migrations follow the rains for fresh grass. However, expanding agriculture and fences in migration corridors threatened this cycle. Conservation groups worked with local communities to develop buffer zones. Here, low-intensity agriculture coexists with wildlife passages, allowing herds to traverse safely. Eco-tourism lodges also employ residents, offering alternatives to poaching or unsustainable farming. Joint patrols monitor illegal fencing or hunting. Over time, savanna health improved, as migratory routes remained open. This illustrates how integrated approaches—combining eco-tourism, community livelihoods, and habitat management—can preserve grasslands for both wildlife and people.**

1. What challenges did Serengeti wildlife face due to agricultural expansion?

2. How did conservation strategies balance human needs with savanna ecosystem protection?

**Multiple Choice**

1. Prairies and savannas differ mainly in:
   a) Height of surrounding mountains
   b) Presence of monsoon rains vs. snow
   c) Their climate (temperate vs. tropical)
   d) Color of the grass

2. Fires in grasslands are typically:
   a) Natural processes that recycle nutrients and limit woody growth
   b) Caused solely by human activity without any natural processes involved
   c) Rare events that hardly affect the ecosystem or its biodiversity
   d) Always harmful, destroying biodiversity

3. Overgrazing in grasslands can lead to:
   a) Complete elimination of dust storms across all regions
   b) Soil compaction and erosion, damaging the ecosystem
   c) Improved soil fertility automatically through natural processes
   d) Rapid forest development

**Matching**

Write the letter of the correct definition on the line next to each term.

| Term | Definition |
|---|---|
| 1. ___ Bison | A) Technique moving livestock between paddocks for recovery |
| 2. ___ Rotational Grazing | B) Key migratory species in East Africa |
| 3. ___ Wildebeest | C) Main cause of large herbivore movement in savannas |
| 4. ___ Savanna | D) Large grazer historically central to North American prairies |
| 5. ___ Rainy Season | E) African tropical grassland with scattered trees |

**Fill-in-the-Blank**

1. _____ grasslands, found in moderate latitudes, often have rich soils used for farming.

2. _____ can help maintain grassland health by removing old growth and returning nutrients to the soil.

3. A _____ approach integrates agriculture, wildlife corridors, and community needs.

**Short Answer**

Answer each question in 2-4 complete sentences.

1. Why are grasslands sometimes referred to as the "breadbasket" regions of the world?

_____

_____

_____

2. How can controlled burns benefit a grassland ecosystem?

3. What are some ways pastoralists can graze livestock without depleting grassland resources?