A Prairie Pickle: Burn, Graze or Mow?

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Prairies are beautiful and important ecosystems that used to spread across most of the central United States. Today, many prairies are gone and have been replaced with crop fields and cities. Prairie restorations are constantly faced with challenges brought on by natural forces. Some of these include invasion by woody plants and trees or the spread of non-native species by wildlife. Prairie restorations require active management in order to be successful and some of the tools that managers use are mowing, grazing and controlled burning. It is our goal that after playing this game, you will understand what prairie management entails and factors that can affect prairie health.

Object of the Game
Beginner Option: Collect the most species cards.
Advanced Option: Add up the values on each card. The player with the highest total wins.

~ Prairie “health” is measured in a number of ways. One way is by measuring species richness. This is simply a count of the species present in an area. Species richness is an indicator of biodiversity. While having a large number of species is useful, it is not the only way to account for the health of a landscape. Some species are rare or declining, and maintaining populations of these sensitive species is one of the many goals of management. The Advanced Option accounts for species that are rare or sensitive; low point values mean that the species is common, while higher point values reward each player for having high quality species diversity. ~
**Setting Up**

Game equipment includes:
- **1 die** – rolled to advance on the game board
- **Character Pieces** – each player selects one to move around the game board. We recommend using medium-large binder clips to hold up the game pieces. The metal wings can be removed once the clip is in place.
- **Plant Species Cards** – to be collected throughout the game, place deck of cards face down on indicated area on game board
- **Animal Species Cards** – to be collected throughout the game, place deck of cards face down on indicated area on game board
- **Chance Cards** – picked up by player when player lands on “Chance” space on game board

“When we see land as a community to which we belong, we may begin to use it with love and respect.” – Aldo Leopold

**Game Play**

**Getting Started**

Choose a character. These characters are real historical figures that have had an impact on the way we think about nature.

Each player should roll the die once. The highest roll starts the game. Once the starting player is determined, each player should roll the die twice. The first roll will determine how many Plant Species Cards the player will draw from the stack on the game board. The second roll will determine how many Animal Species Cards the player will draw from the stack on the game board. Once all the players have selected their plant and animal cards, the first player will begin their turn.

**Characters:**

- **Aldo Leopold (1887-1948)**
  Aldo Leopold was a famous conservationist, scientist and author from Burlington, IA. He is best-known for his book *A Sand Country Almanac* and is represented by a wolf because he changed many people’s views about the importance of predators in the balance of nature.

- **Ada Hayden (1884-1950)**
  Ada Hayden was the first woman to earn a Ph.D. at Iowa State University. She is represented by a Big Bluestem plant because she worked to set aside native prairie as preserves to be maintained for future generations.

- **Rachel Carson (1907-1964)**
  Rachel Carson is famous for her book *Silent Spring*, which warned the American public about the dangers of pesticides on ecosystems and species, and helped to start the environmental movement. DDT, a pesticide commonly used in that time, was found to weaken egg shells, so she is represented by a bird’s nest.
Jay Norwood ("Ding") Darling (1876-1962)
Ding Darling is famous for his political and conservation cartoons. He helped found the National Wildlife Foundation in 1936. He is represented by his blue goose which is now featured on all National Wildlife Refuge signs.

Celia Hunter (1919-2001)
Celia Hunter was instrumental in establishing wilderness refuges in Alaska through the founding of the Alaska Conservation Society. She was a member of the Women Airforce Service Pilots (WASPs) and flew planes during World War II. Women were not allowed to fly military planes north of Great Falls, Montana, but Celia and her friend Ginny Hill Wood borrowed a plane and flew to Fairbanks, Alaska, anyway, where Celia began her career in conservation. She is represented by a caribou.

John Muir (1848-1914)
John Muir was born in Scotland, but he spent much of his life campaigning to preserve American forests. He is called the “Father of National Parks” and is represented by the National Parks symbol because he helped establish several National Parks, including Yosemite and Sequoia. He also founded the Sierra Club, an important conservation group.

Margaret Murie (1902-2003)
Margaret Murie was a naturalist and author who has been dubbed the “Grandmother of the Conservation Movement.” She assisted in passing the Wilderness Act, which provided a formal definition of wilderness and protected 9.1 million acres of federal land. She was honored with the Presidential Medal of Freedom for her work in protecting the Arctic National Wildlife Refuge. Margaret Murie is represented by mountains, an important geographical feature of the park.

Sigurd Olson (1899-1982)
Sigurd Olson was a nature writer who spent much of his career in northern Minnesota, working to protect important natural features. He was instrumental in the founding of the Boundary Waters Canoe Area Wilderness, and also helped to establish Voyageurs National Park, the Arctic National Wildlife Refuge, and Point Reyes National Seashore. Olson served as a wilderness guide for over 30 years in northern Minnesota and northwestern Ontario, so he is represented by a canoe.

"Conservation is a state of harmony between man and land." – Aldo Leopold
On Your Turn
Roll the die and advance that number of spaces.
If you land on a spot with a picture:

**Draw a plant card**
Plant cards feature species that were common to Iowa Prairies. Some species are still very common and can be easily replanted in “restored” prairies while others are a bit more picky and are only found in prairie “remnants” where they have been growing for a hundred years or more. It is important to protect remnant prairies so we can be sure to keep those extra special species.

*Bonus Bloomers Card:* This is the most valuable plant species card. It represents three species that grow at different times throughout the year. This is important for prairie health because having native species that bloom at different times will ensure that food is available to wildlife year round and also because active plant species will be more successful at fending off invasive plant species.

*Invasive Species Cards:* Invasive species can reduce the health of an ecosystem, such as a prairie. Prairies help to filter water, recycle nutrients and clean the air we breathe. A healthy prairie is healthier for us as well. Invasive species have been brought in accidentally, or for farming and can out-compete native species for important resources. Any player with one of these cards at the end of the game will lose points. (Details can be found in the “how to win” section.)

**Draw an animal card**
Animal cards feature species that were common to Iowa prairies. Some species have adjusted well to life with humans and are still doing well. Other species may be threatened or endangered by loss of habitat and other human impacts on the environment. Higher point values indicate animals that are threatened or endangered, while low point values are used to show which species are common.

*Triple Trophic Card:* This is the most valuable animal species card. It represents three trophic levels, or levels in the food chain. Having predators and prey is important—everybody has to eat!

**Draw a chance card**
Mother Nature can be fairly fickle. Storms, droughts and other events beyond your control can have a big impact on the health of a prairie.

**Herbicide Overspray**
Your neighbor accidentally sprayed part of your prairie with pesticides and herbicides. They said they were sorry, but the plants and animals that lived in that area didn’t make it. Put back one plant and one animal card.
Prescribed Burn
Fire has been a natural part of the prairie for thousands of years. However, burning the prairie too often and over too large of an area can be bad for plants and animals. Annual plants, that only live for one year, may not have any seeds left to sprout and will die out. Insects and small mammals may be left without places to live or food to eat. Roll the dice to see how long it has been since the last burn. If you rolled a 5 or a 6 then your animals and plants are safe! Draw an animal or plant card. If your number was smaller than 5, then put back one animal and one plant card.

Mowing
Mowing can knock down big plants and allow smaller plants to catch up. But, make sure you don’t mow while the birds are nesting! Roll the die to see when you mow. If you roll a 1, 2, 5, or 6, good job! Your birds are safe. Draw an animal card. If you rolled a 3 or a 4 then you should put back one of your animal cards.

Too Much Woody Encroachment (Invasion by shrubbery)
Shrubs are essential for some prairie animals and insects, but too many shrubs can negatively impact prairie plants. Put one of your plant cards back in the deck and draw an animal card instead.

Wetland
Your wetland attracts new animal species. Pick an animal card from the player of your choice.

Grazing
Light to moderate grazing by bison, cattle or even goats can encourage some plants to grow. However, heavy grazing can be bad for plants. Roll the die to see how much your grazers have eaten. If you roll a 1, 2, or 3, your light grazing encourages new plants to grow. Draw a plant card. If you roll a 4, 5, or 6, then the grazers have eaten too much! Put one of your plant cards back in the deck.

Funding
Donations from visitors allow you to buy new seeds to add to your prairie. Pick a plant card from another player.

Roll Again
Your prairie is very healthy! Keep up the good work.

Lose a turn
Strong Thunderstorms make it unsafe to go outside. Stay inside and skip a turn.

*** Some cards may ask you to put back an animal or a plant card. If you are playing the beginner option, you may pick which card to put back. If you are playing the
advanced option, we recommend that you shuffle your cards and pick one while they are faced down. ***

Conservation means the wise use of the earth and its resources for the lasting good of men. ~ Gifford Pinchot

**How to Win**

**Beginner Option**
Count all of your species cards. If you have the Bonus Bloomers or Triple Trophic cards, they count for three species.

*Invasive Species Cards:* At the end of the game, if you have an invasive plant species card, then you must subtract 3 species from your total.

**Advanced Option**
Add up the values on each of your cards.

*Invasive Species Cards:* At the end of the game, if you have an invasive plant species card, then you must subtract 10 points from your total.

*A note about the “CC” values. CC stands for coefficient of conservatism and gives a quick indication of how rare a species is in Iowa today. Common species have lower numbers (0-3), while more rare species have higher numbers (8-10). The system was initially implemented to rank plants, but we have adapted it here to cover animal species as well.*
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