

Noxious Weed Game

Objective: To illustrate to students how noxious weeds spread and their effect on wildlife, agriculture and recreational opportunities.

Background: Noxious weeds are a big problem in Montana. Once widely seen only as an agriculture problem, noxious weeds are everyone's problem. They threaten rangeland, rivers, lakes and the fish and other animals that use these areas.

This activity is meant to show how noxious weeds spread and dominate an area. They displace other native plants, and are a poor nutrition source for range and game animals. They have a profound effect on riparian areas by leading to loss of overhead cover, increase in water temperature, and increased runoff in infested areas. This runoff leads to heavy sediment loads in rivers and streams, loss of spawning habitat, and loss of stream channel.

Noxious weeds threaten our way of life. Educating young people about the effects of noxious weeds is necessary. Students should come away from this game with a basic knowledge of noxious weeds names, what they look like, and how they are spread. The Noxious Weed Activity will work best with groups larger than 15, and with grades 4-6. Allowances must be made as to size of group and number of noxious weed seed tickets, native vegetation tickets and animal badges that are distributed.

Overview: This activity is meant to show how noxious weeds can displace native plants, and the effect they have on game animals, and humans. The game is played on a small playing field. Participants are broken up into two groups. One group will represent vegetation, and the other to represent game animals (deer, elk, moose, and antelope). Students who are chosen to represent vegetation will randomly distribute on the field of play. Students who represent animals will stand at the end of the playing field.

Each student will have an identification badge. These badges have pictures of the plant or animals the student represents. On these badges will be a picture of a single animal (elk, deer, moose and antelope). Vegetation badges will have pictures of noxious weeds or native plants.

The students that represent animals will walk toward the opposite end of the playing field. As they walk they will come in contact with students representing vegetation. The students representing plants will hand out tokens to the animals as they walk through. These tokens represent noxious weed seeds and native vegetation food.

When the students representing animals reach the opposite end of the field they will look to see what type of vegetation tokens they have. All noxious weed seed tickets and native vegetation tokens should be handed out by the students representing plants. Every animal should receive at least one seed ticket or food token. Any animal which receives a noxious weed ticket becomes a noxious weed and must join the other plants on the playing field. The facilitator will give these new noxious weeds an identification badge, and the appropriate number of noxious weed seed tickets for that round. Those who receive a native vegetation food token remain animals. The animals will again walk through the plants. Those animals that receive noxious weed seed tickets in the next round will join the others on the playing field.

After each round the facilitator gathers the students representing vegetation. The students are given the appropriate amount of vegetation tokens, and the students representing animals will again stroll through. After a few rounds the amount of animals will be few, while the amount of noxious weeds will be many. This shows how noxious weeds can dominate an area and reduce animal populations.

Setup: A playing field of about 50'x25' should be set up with cones. With a group size of 20 as an example, five students should be chosen to represent all vegetation in a given area. Four of the students will represent native vegetation, one student representing a noxious weed. The rest of the group will represent animals that cross through the vegetation. When playing this game 20-25% of the students should be plants, and 20-25% of the plants should be noxious weeds. By using these percentages the game will work with any size group.

Materials (for group size of twenty): Each participant gets an identification badge. These badges will be simple photocopies. The facilitator will make photocopies of the provided badges to get the appropriate number of badges for their group size. The same goes for the native vegetation food tokens and noxious weed seed tickets. For a group of twenty, the game will require five students to be plants, with one of the five being a noxious weed. The other fifteen participants will represent animals. For this amount of participants the amount of identification badges, native vegetation tokens, and noxious weed seed tickets are as follows:

15 animal badges

4 native vegetation badges

16 noxious weed badges

12 native vegetation food tokens

15 noxious weed seed tickets

Note: These amounts will change with group size.

Facilitator: Before the game begins it is necessary to have a brief discussion concerning noxious weeds, their spread, and what participants can do to help prevent further spread. As the game progresses it is the facilitator's duty to ask participants what is happening at the end of each round. It should become obvious that the spread of weeds is displacing native vegetation thus leading to a decline in animal populations and recreation opportunities.

Round 1- 4 native vegetation (12 native veg. food tokens), 1 noxious weed (3 noxious weed seed tickets).

- Each of the four students chosen to represent native vegetation, they will be given three native vegetation food tokens. One student will represent a noxious weed. He/she will have three noxious weed seed tickets. It will be their job to distribute all of the tickets and tokens. Animals and recreationists will pick up one ticket as they pass through the vegetation.
- All animals and recreationists walk through the plants not knowing what might be noxious.
- Once through, those who picked slips marked as noxious weeds must also become noxious weeds. Those who picked up only food tokens may remain as animals or humans (this represents both the spread of weeds, the effect on animals populations, and diminished recreation value).

Round 2- 4 native veg. (8 food tokens), 4 noxious weeds (8 noxious weed seed tickets)

- Reshuffle students who represent vegetation.
- Native vegetation representatives get two tokens each. Noxious weeds get two noxious weed seed tickets each.
- Animals and recreationists will once again walk through the plants, those that receive tickets marked as noxious weeds will be noxious weeds the next round.

Round 3- each native veg. gets one token, each noxious weeds gets one noxious weed seed ticket

- Reshuffle students who represent vegetation.
- Animals and recreationists again walk through the plants, those that receive noxious weed seed tickets become noxious weeds in the next round.
- Nearly all animals and recreationists should be gone by now as a result of noxious weed spread.
- Go to round four if necessary. Use round three token and ticket distributions.

Extensions:

As an added activity, teachers can have their students make their own badges, native vegetation food tokens, and noxious weeds seed tickets. By doing this students can implement art skills by drawing noxious and native plants. This would also be a good way for students to become familiar with noxious weeds before the game even starts.

Teachers could also implement math to figure noxious weed spread. Example: If a spotted knapweed plant has 25,000 seeds, with an 80% seed germination rate, how many new plants will there be next spring?

Social studies extension – Example: What if noxious weeds replaced native vegetation? What would happen to the economy? What effects would it have on ranching and tourism, Montana's two biggest industries?

History extension – Example: Use a timeline to relate historical events to weed spread across Montana.