How do nutrients change flowering in prairies?

Check your understanding

1. How have human activities affected the nitrogen cycle?

   Humans create synthetic fertilizer, which converts nitrogen gas into a form plants can use. While synthetic fertilizers help food crops grow bigger and faster, they also feed other plants and algae when they escape farm fields – sometimes with serious ecological consequences.

2. Why do nutrients in fertilizers applied to farm fields end up in other places, like prairies?

   Crops can’t absorb all the nutrients that are applied to farm fields. Some of these nutrients leach into the soil, billow up with dust in the wind, or flow into the water. Prairie habitats are found amongst many farm fields in the Midwestern United States, so these habitats are vulnerable to nutrient over-enrichment.

3. What effect did excess nitrogen have on flowering plants in tall-grass prairies?

   Added nitrogen caused plants that flowered early in the season to thrive. They also caused plants that flowered later in the season to decline, likely because the early-season plants grew so much there wasn’t space and resources for the later-season plants to grow.

4. How might nutrient-induced changes to flowering plants in the prairie affect the wider ecosystem?

   Plants in the prairie provide food for herbivores, like deer and many insects, as well as voles, so changes to plants would affect these animals as well. Many flowering plants also provide food for pollinating insects, like bees, so changes to these plants would affect them too.