

ENVIRONMENTAL SCIENCE 20: PLANTS

OUR COMPLICATED RELATIONSHIP WITH WEEDS

OUTCOME

- ES20-TE2: Examine the role plants play in an ecosystem, including the ways in which humans use plants.

BACKGROUND KNOWLEDGE

- Develop a thorough understanding of the roles that plants play in local terrestrial ecosystems. This is not an exhaustive list, but you can investigate their role in succession, mitigating climate change, symbiosis with fungi, or ethnobotany.
- Develop definitions for native species, exotic species, and invasive species.

ACTIVITY: WEED WALK

1. Ask students to define the term “weed” as it relates to undesirable plants. Brainstorm the characteristics that make a species “weedy”.
2. Listen to this episode of CBC’s Unreserved and consider the perspectives presented by Nicholas Reo (Professor of Environmental Studies, Dartmouth College). Revisit the thinking from your initial brainstorm and decide if you want to edit or refine your ideas.
3. Take a walk around your neighborhood and look for spaces that appear to have “weeds” present.
4. Challenge each student to focus on one species and see how many individuals they can find on your walk. Encourage them to sketch and label it, and record observations about how and where it grows. Here is a list of local common urban weeds.
5. After observing weeds in the city, discuss your findings. From an ecological perspective, what role do “weeds” play in urban ecosystems? Think about soil health (erosion, compaction, nutrient depletion), biodiversity (habitat and food for pollinators among grass monocultures), biogeochemical cycling, and food/medicine.
6. Revisit the species you found in your neighborhood and investigate their known uses as food/medicine. Examples include: dandelion, plantain, pineapple weed, chickweed, clover, lamb’s quarters/pigweed, and sweet clover

MATERIALS

- Clipboards (or something hard to write on)
- Writing utensils

HEALTH/SAFETY

- Ensure that students are aware of the risks of harvesting plants in the city (pesticide/fertilizers, vehicle exhaust, etc) and caution them against harvesting, processing, and/or ingesting urban plants without proper mentorship.

DID YOU KNOW?

The Meewasin team creates long-term, integrated management plans to maintain biodiversity in their conservation zone. Some of their strategies involve mimicking natural processes like fire and grazing, which have always been a critical part of prairie ecology. Contact Meewasin to see if you can bring your class to see a grazing or burning demonstration event.

EXTENSIONS

1. **ES20-TE3: Recognize the need for intact habitat to support animal populations and biodiversity.** Contact Meewasin to learn more about invasive species in prairie, riparian, and/or wetland ecosystems. Investigate the differences between “weeds” in urban environments, and invasive/noxious species in intact ecosystems. Engage in an act of stewardship by volunteering to participate in invasive species control in Meewasin’s conservation zone.

ESSENTIAL QUESTIONS

1. What role do all plants play in an ecosystem, regardless of if they are native/introduced/invasive?
2. What makes a plant “invasive”?
3. What impacts do invasive species have on biodiversity?