
Deliberative Democracy: Single-Use Plastics

Alignment with Course Content

This module can be used to reinforce understanding of ecological concepts, as well as biodiversity and conservation concerns.

Necessary Background Knowledge

- Ecosystem/community/population ecology
 - Biodiversity and conservation
-

Policy Question

Your group is being asked to make a policy recommendation regarding single-use plastics. Should an outright ban of single-use plastic products be implemented in the United States? You may focus on particular communities of organisms and/or ecosystems in your decision, and you may also address if this ban should exist on a local, state, and/or federal level. Please briefly explain the reasoning behind your consensus.

Module Goals

- Describe how different levels of biological organization or types of ecosystems may be affected by anthropogenic pollution
- Address a problem with consideration of multiple variables - both scientific and socioeconomic factors

Deliberation Scaffolding

Students should consider

- What are single-use plastics? How much waste is produced from single-use plastics?
- Are there already bans or other policies in place to reduce single-use plastic waste? Are these bans or policies effective?
- Can single-use plastics be replaced with reusable alternatives? Are these alternatives practical?
- Who is affected by bans on single-use plastics?
- What ecosystems or communities are affected by single-use plastics? How?
- Why is waste from single-use plastics a concern?
- Should certain types of single-use plastics be excluded from bans?

Instructor Notes

Implementation Suggestions

- The module topic and peer-reviewed article can be tied to ecological concepts through a discussion of sources of anthropogenic pollution and various effects on different environments, communities, and populations
- The peer-reviewed assignment in an open-ended format can be completed as an in-class activity rather than outside of class
- For wrapping up on the final discussion day, choose several groups that investigated different aspects of the problem (e.g. socioeconomic, environmental, etc.) to make a very short (2 minute) presentation of the key points that led to their science advisory statement

Articles

Media:

[The Atlantic 2016-The Global Cost of Electronic Waste](#)

Peer reviewed:

[Environmental Health Perspectives 2008-Sunscreens Cause Coral Bleaching by Promoting Viral Infections](#)

DOI: [10.1289/ehp.10966](#)

Informative Articles Students Might Find

[Peer Review-Plastic waste inputs from land into the ocean](#)

[Peer Review-International policies to reduce plastic marine pollution from single-use plastics \(plastic bags and microbeads\): A review](#)

[Peer Review-Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea](#)

[Media- More Recycling Won't Solve Plastic Pollution](#)

[Media-We Made Plastic. We Depend on it. Now We're Drowning In it](#)

[Media-What Happens to the Plastic we Throw Out](#)

[Media-Are Tote Bags Really Good for the Environment?](#)

[Media-Why People With Disabilities Want Bans On Plastic Straws To Be More Flexible](#)

[Media-As Ban On Plastic Straws Spreads, Demand For Paper Alternatives Increases](#)

[Peer Review-Accumulation and fragmentation of plastic debris in global environments](#)

[Media-Seattle Bans Most Plastic Straws In Restaurants](#)

Media Article (Multiple-Choice Assignment Ideas)

[The Atlantic 2016-The Global Cost of Electronic Waste](#)

The Global Cost of Electronic Waste by Syed Faraz Ahmed, The Atlantic

Example question topics:

- Why is it more economical now to replace broken devices?
- What is one of the first examples of planned obsolescence?
- Why is electronic waste dangerous?
- What is one way for consumers to reduce electronic waste? What is one way for manufacturers to reduce electronic waste?

Peer Reviewed Article (Multiple-Choice Assignment Ideas)

[Environmental Health Perspectives 2008-Sunscreens Cause Coral Bleaching by Promoting Viral Infections](#)

DOI: [10.1289/ehp.10966](#)

Sunscreens Cause Coral Bleaching by Promoting Viral Infections by Roberto Danovaro, Lucia Bongiorno, Cinzia Corinaldesi, Donato Giovannelli, Elisabetta Damiani, Paola Astolfi, Lucedio Greci, & Antonio Pusceddu.

Example question topics:

- The purpose of different sections within a peer-reviewed article (e.g., introduction and experimental)
- Describing the central motivating factors behind the work
- Describing the experimental design
- Describing the importance of one of the methods used and the data produced
- Describing the importance of data presented in tables or figures
- Distinguishing the differences in data presented between different tables or figures

Peer Reviewed Article (Alternate Open-Ended Assignment Ideas)

[Environmental Health Perspectives 2008-Sunscreens Cause Coral Bleaching by Promoting Viral Infections](#)

DOI: [10.1289/ehp.10966](#)

Sunscreens Cause Coral Bleaching by Promoting Viral Infections by Roberto Danovaro, Lucia Bongiorno, Cinzia Corinaldesi, Donato Giovannelli, Elisabetta Damiani, Paola Astolfi, Lucedio Greci, & Antonio Pusceddu.

1. What was the central motivating factor behind the work? That is, why did the authors start the work?
2. If the paper is hard to understand (at first), what would be your next step?
3. Why is it important to quantify the release of sunscreen in seawater?
4. What do Figures 3 and 4 demonstrate?
5. What statistical results are reported in the paper? Why are they important? How are they presented (e.g. in the text, table, etc.)?
6. How is viral infection in corals related to the presence of sunscreen in seawater?

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Deliberative Democracy: Single-Use Plastics

Leader First & Last Name		Facilitator/Spokesperson First & Last Name	
Recorder First & Last Name		Devil's Advocate/Summarizer First & Last Name	

Your group is being asked to make a policy recommendation regarding single-use plastics. Should an outright ban of single-use plastic products be implemented in the United States? You may focus on particular communities of organisms and/or ecosystems in your decision, and you may also address if this ban should exist on a local, state, and/or federal level. Please briefly explain the reasoning behind your consensus.

What do you need to know before you can make an informed recommendation?	Why does this missing piece of information matter? (include social and science rationales)	Who will find 2-3 peer-reviewed articles about this concept?
A.		1. 2. 3.
B.		1. 2. 3.

-Day 1-

C.		1. 2. 3.
D.		1. 2. 3.

Before doing background research, please provide two other potential policy options regarding single-use plastics, and then circle the option that you currently support as your recommendation (and will research further for Day 2):

1. Nothing should be done regarding single-use plastics in the United States (i.e. the status quo should be maintained).
2. _____

3. _____

End of Day 1. Consult your textbook and find at least 2 peer-reviewed articles per question for next week.

Leader First & Last Name AND Exam Number		Facilitator/Spokesperson First & Last Name AND Exam Number	
Recorder First & Last Name AND Exam Number		Devil's Advocate/Summarizer First & Last Name AND Exam Number	

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Evidence to support your science advisory recommendation:	Source title and journal (with initials of who contributed this article):	Which lecture topics or textbook chapters cover this material?
A.		
B.		

-Day 2-

C.		
D.		

Science Advisory Statement (**group consensus**):

End of Day 2. Thank you for investing your time and energy on this activity!