



Climate 101 Module

Virtual Climate & Public Lands Trivia Night Activity

Trivia nights can be a blast, even online! This project will require you to practice your Zoom facilitation skills, but you'll find the technology fun and really useful when you get the hang of it. Recruiting a co-host will make a huge difference, allowing one person to facilitate and the other operate the Zoom controls.

Here is a **3 step guide to hosting a virtual Climate & Public Lands Trivia Night!** The guide includes instructions on how to recruit players and a step-by-step manual for night-of hosting.

Needed materials:

A paid subscription to Zoom is necessary to host a trivia night. The free version kicks you out after 40 minutes, which isn't long enough for a night of trivial fun. You will need to go to your Zoom settings and **enable breakout rooms**. If you've never used breakout rooms, watch [this video](#) for a great primer. We highly recommend that you gather a few friends beforehand to practice the steps of putting people into breakout rooms before the night of the event.

Step 1: Recruit Players

Send an invitation email. Invite your Broadband members to attend and encourage them to send the invitation to a few members of their community who might like to join in on the fun. When you invite people, make sure that they know: (1) when the event is; (2) how to RSVP; and (3) how the event will work.

Sample invite template below:

You are invited to join the [Broadband name here] for a Virtual Climate Change & Public Lands Trivia Night on [insert date] at [time, time zone]!

What's a Virtual Trivia Night?

It's just like an in-person Trivia Night, but we play over Zoom (a video conference system).

This Virtual Trivia Night is on [insert date] at [time, time zone]. You can RSVP by emailing me at [insert email].

How to Join the Event

Make sure that you download and install Zoom [include download link] on your computer, phone, or tablet beforehand. When it's time for the event, you can follow this link to the live video stream: [insert Zoom link]



Timeline

When the event starts, we will randomly assign everyone to teams. We will take a few minutes to say hello and iron out any technical issues. Trivia will start at [insert time 5 minutes after official start time]. There will be one 5 minute intermission in the middle, and we should be done by [1.5 hours after start time].

*Looking forward to it!
Wildly,
Your Broadband*

Step 2: Select Questions

We have created a mix of questions that will engage and excite players around the topics of climate change and public lands. These questions are listed at the end of this document. There are 8 categories in total with 4 questions in each category. Some questions are trickier than others! Consider swapping out questions for local examples or adding your own flare.

The last category of questions is up to you to create. Choose a topic that you know interests your Broadband or your local community such as local public lands trivia, local species identification, state trivia, wildlife trivia, etc.

The example questions are included at the end of this document.

Step 3: Get Ready to Have Fun

The night has arrived, and it's almost time for some trivia. Preparing a few items beforehand will hugely help the event flow smoothly: 1) a printed list of the questions and their answers, 2) a blank paper to record team names and scores (grid paper works well for this).

As everyone starts trickling into the room, say hi! Every couple minutes tell people that you are going to wait until everyone arrives before you start. At five minutes past your official starting time, you can finally start!



There are 6 stages in a great Virtual Trivia Night. See the step-by-step instructions for each stage below.

1. Give Instructions & Select Team Names

Introduce yourself and explain how the event will work, loosely following the text below:

“There will be eight categories, each with four questions.

We’ll take a five minute break between rounds 4 and 5.

For each trivia question, I will send you and your randomly assigned teammates to a breakout room to agree on an answer.

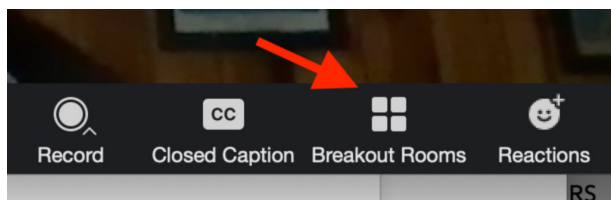
Before we begin, I’ll give you a few minutes in the breakout rooms to meet your teammates, select a team name, and choose someone to record your answers.

You will see a pop-up window inviting you to join a breakout room. Click that button to join your team in the breakout room.

When it is almost time to come back to the main room, you’ll get a pop-up on your screen with a 30 second countdown.

Let me just set up the rooms, and then I’ll send all of you to meet your trivia buddies. Any questions?”

Once you’ve finished the instructions and answered questions, click “Breakout Rooms” on Zoom.



Randomly assign players to groups, maximum 4–5 people per group. *Make sure to click “options” in the bottom left before starting the breakout rooms. In the options, select “Move all participants into breakout rooms automatically” and “Countdown after closing breakout rooms”. Set the countdown to 30 seconds. Then send everyone to their breakout rooms.

Let participants spend 3 to 4 minutes in the breakout rooms introducing themselves, choosing a team name, and a recorder. Clicking the button to close breakout rooms. Participants will see a 30 second countdown and will trickle back into the main room over the next 30 seconds. Wait until everyone has returned to give the next set of instructions.



2. Begin!

Once everyone is back, remind participants that their recorder needs to write down the group's answer. Ask everyone to play on an honor system — no googling or phoning a friend. Introduce the first category and ask the first question.

Then send everyone to their breakout room. Wait 1 to 2 minutes and then close the room (consider setting a timer on your phone for each round). Everyone will return to the main room over the next 30 seconds. Ask each team representative to type their answer into the chat box, preferably as an individual message to you so that no one is swayed to change their answer. Now, ask the next question and send everyone into their breakout rooms. While the teams come up with an answer, you have time to write down their scores from the last question.

If a question seems too hard, consider taking the closest answer or a range (plus or minus a certain amount). If participants want you to accept multiple answers (or accept some answers as half credit), this is fine too.

Finish the first four categories of questions. At the end of round 4, send everyone on a five minute break. Make sure to specify the exact time when the break will end.

During the break, score the questions. Add up the number of questions that each team got right and set these scores aside to share when everyone returns.

3. Score and Reveal Round 1 Through 4 Answers

Read the questions and answers to the whole group and then reveal the scores. *Note: If a group tells you that your math is wrong, double check. It's easy to get the math wrong. And if you have several groups (more than 6), you can ask groups to score each other.*

4. Play Rounds 5 through 8

After you read out the scores, start the second session of questions. Follow the same format as rounds 1-4 until you finish all of the questions.



5. Score the Second Half

Give yourself five minutes again to score the final point tally. Once you've scored everyone, set aside the scores. Read the questions and reveal the answers to the teams. But if there is a tie, don't reveal the final scores yet.

If there is a tie, read out the tiebreaker question and send everyone to their rooms (only the teams tied for first place can win, but everyone usually still wants to guess). If there isn't a tie, skip this round.

6. Reveal the Winner

Reveal the final scores, and congratulate the winning team. When you are done, consider keeping the Zoom meeting room open for a few minutes so that people can chat about the questions. Be sure to include an invitation to any new faces to join your Broadband and attend any upcoming events!



TRIVIA QUESTIONS

1. Public Lands

Q: On June 3rd, 1924, the first official wilderness area in the United States received its designation, largely thanks to its championing by ecologist and activist Aldo Leopold. What is the name of this wilderness?

A: Gila Wilderness, New Mexico

Q: Which one of these is NOT allowed in a designated wilderness area? A) a horse, B) a mountain bike, C) a mining claim from 1950, D) a dam authorized by the president.

A: A mountain bike. Any form of mechanized travel is prohibited in designated wilderness areas, including bikes. Mining claims in existence before the passage of the Wilderness Act are allowed to operate, The president can authorize the construction of a dam or other water regulation structure if they deem that it meets a public need. Horses have always been allowed!

Q: Public lands have a complex history that is inextricable from the violent land capture and forced removal of indigenous peoples by white settlers. It is valuable to educate ourselves and acknowledge the peoples who are Indigenous to these lands. Each team will be awarded a point for each tribal nation that they can name whose territory {YOUR LOCATION HERE} sits upon.

A: Type your trivia location into this website to find your locale-specific answer: <https://native-land.ca/territory-acknowledgement/>

(Example: Durango, Colorado sits on the historical territory of the Pueblo and Ute tribes.)

Q: What action by the government is required to designate a public land area as wilderness?

A: An act of Congress is needed to establish a wilderness area.

2. Land Management Agencies

Q: There are four federal agencies that manage public lands that we Broads work to protect. Through their combined efforts, they oversee more than a quarter of the US land mass! Name the "Big Four."

A: The Bureau of Land Management (BLM), the Forest Service (USFS), the Fish and Wildlife Service (USFWS), and the National Park Service (NPS).

Q: Land management agencies have come under fire over the years for their concessions to commercial interests, and one author had some choice words for the Bureau of Land Management. What alternative meaning did this acronym, the BLM, once acquire?

A: Bureau of Livestock and Mines.



Q: Three of the federal land management agencies fall under the Department of the Interior, while the fourth is part of the Department of Agriculture. Which agency is the odd one out -- the BLM, USFS, USFWS, or NPS?

A: The USFS is part of the Department of Agriculture! It was established in 1905, not for conservation purposes, but for the management and promotion of logging enterprises.

Q: How many national parks are there currently in the United States? (Bonus point if you can name the very first one!)

A: There are 62 protected areas designated as national parks currently. In 1872, President Ulysses S. Grant announced Yellowstone as the first.

3. Climate Impacts

Q: Sea level rise as a result of climate change poses a major risk to the planet and its inhabitants. According to scientists, what is the current "worse-case scenario" projection, in feet and inches, of sea level rise by the end of the century? (We will accept any answer within a range of 4 inches.)

A: Both the low-end and "worst-case" possibilities were revised upward in 2017 following a review by the U.S. Interagency Sea Level Rise Taskforce. Based on their new scenarios, global sea level is very likely to rise at least 12 inches (0.3 meters) above 2000 levels by 2100 even on a low-emissions pathway. On future pathways with the highest greenhouse gas emissions, sea level rise could be as high as 8.2 feet (2.5 meters) above 2000 levels by 2100.

Q: Certain communities or groups are much more susceptible to climate-related harm (sometimes referred to as frontline communities). Can you name three of these groups?

A: (Moderator, use your discretion on these! The answers need not be word-for-word.) Children, the elderly, low-income communities, indigenous peoples, non-indigenous communities of color, women, and communities reliant on natural-resource economies.

Q: What climate change-intensified phenomenon cost the state of California \$40 billion dollars in 2017 and 2018?

A: Wildfires! A warming climate means longer summers and shorter winters, drier forests, and drought -- the perfect recipe for the outbreak of deadly fires.

Q: Glaciers in western North America over the past 18 years have lost some 117 gigatons of ice (A gigaton is one billion tons) — if all of this ice had melted at once and spread across the state of Washington, how deep would the water be? a) 2 inches b) 6 inches c) 2 feet d) 6 feet

A: C! "It would be about two feet deep," said David Shean, co-author of a recent study cataloging glacial loss. "If all of the ice that has been lost from glaciers were to melt at once, we would be up to our knees in water."



4. Carbon Emissions & Public Lands

Q: Public lands management has the potential to greatly impact climate change -- both positively and negatively. For example, forests are a "carbon sink," absorbing and storing CO₂, while fossil fuel extraction sites are a "carbon source," releasing it into the atmosphere. Currently, are public lands capturing more carbon than they emit, or emitting more than they capture?

A: Public lands are currently emitting 4.5x more carbon than they capture, primarily through the extraction and burning of fossil fuels.

Q: 42% of **this** major fossil fuel in the U.S. is extracted from within public lands!

A: Coal! That's right, a near-majority of the "dirtiest energy source" is coming straight out of public lands.

Q: What simple hydrocarbon gas is the main component of the fossil fuel we call natural gas?

A hint: it's flammable, stinky, and a potent greenhouse gas.

A: Methane.

Q: What percent of U.S. carbon emissions come from public lands? (We will accept a range of 5 percentage points.)

A: Estimates vary between 20-25%. If public lands in the U.S. were their own country, they'd be the 5th-largest polluter in the world.

5. Natural Climate Defense

Q: Though nowadays it might be common knowledge, the term "greenhouse effect" wasn't always part of everyday language. In what year was this term first coined (We will accept a range of 5 years on either side)? One bonus point for the name of the French scientist!

A: 1824 by Jean Baptiste Joseph Fourier

Old-growth forests, coastal marshes, and prairies are all carbon sinks, meaning they absorb carbon and sequester it -- taking it out of the atmosphere and storing it within trees, vegetation, and deep soils. Can you guess which one of these ecosystems is most efficient at sequestering carbon?

A: Coastal marshes are the most efficient carbon sinks by far! By square foot, these marshes absorb 10x the amount of carbon that forests do.



Q: Trees have the enormous potential to store carbon! What **percentage** of necessary carbon reductions could forests provide to stabilize the climate? (We will accept anything within 5 percentage points.)

37%! If forests across the world were operating at their highest storage capacity, meaning old, biodiverse forests were allowed to flourish, they could provide over one third of the carbon drawdown needed to avoid climate catastrophe.

Q: What is the most carbon-dense forest in the world?

A: Evergreen temperate forests dominated by mountain ash in southeastern Australia have the highest known biomass carbon density in the world. The great coastal redwoods of Northern California and the temperate forests of the Pacific Northwest also have exceptionally high carbon storage potential.

6. Dams, Logging, and Grazing

Q: Since European settlers arrived in the 16th century, what percentage of original American old-growth forests have been lost to logging? (We will accept any answers within 5 percentage points.)

A: 85% of these forests are gone.

Q: The act of chopping down a tree releases how much of its stored carbon?

46%! Through limbing and chopping, nearly half of all the tree's carbon -- sequestered over decades -- returns to the atmosphere during the logging process.

Q: I can tower 60 stories high or just a few feet. My average age is 65 years old. I've never been one to "go with the flow." What am I?

A: I am a dam!

Q: There are almost 500 dams in the Columbia River Basin/Pacific Northwest, built for hydro-power, irrigation, and flood control. Can you name which of these is known to be the most harmful to salmon passage in the area? Hint: it was completed in 1979 on the Columbia River.

A: The Chief Joseph Dam, in Douglas and Okanogan Counties, Washington. It has no fish ladders installed on its 236-ft structure, and as a result, blocks all fish passage to the upper Columbia River system.



7. Leave No Trace

Q: Broads strive to minimize our impact in nature. There are 7 guiding principles of the Leave No Trace philosophy -- can you name three?

A: 1) Plan Ahead and Prepare, 2) Travel and Camp on Durable Surfaces, 3) Dispose of Waste Properly, 4) Leave What You Find, 5) Minimize Campfire Impacts, 6) Respect Wildlife, 7) Be Considerate of Other Visitors.

Q: You are out for a backpacking trip in the wilderness and come across a beautiful lake. You decide to camp here for the night. How far away from the lake should you camp in order to minimize your impact?

A: In order to avoid impacts to fragile riparian habitats and wildlife that depend on bodies of water, always camp 200 feet away from rivers and lakes. That's about 70 big footsteps!

Q: *There are two animal characters often associated with the Leave No Trace philosophy; they've been used by the Forest Service to promote careful use of the outdoors for decades. We all know Smokey the Bear, what is the name of the **other** Forest Service mascot? A bonus point will be given for the correct slogan that this animal is known for.*

A: Woodsy Owl. "Give a hoot -- don't pollute!"

Q: Properly disposing of trash is one of the easiest ways to follow Leave No Trace. Still, over 100 million pounds of trash are left in U.S. national parks every year. What is the most common item left behind?

A: Orange peels! Folks often think that this "natural trash" is okay to leave behind -- however, they attract animals to human-frequented areas, affect wildlife behavior and health, and can take 2 years to decompose.

8. In your own backyard!

Here is your opportunity to create some questions that are specific to your area! Consider including a trivia question about your Broadband's history! Do a little research on the public lands near you, and quiz your trivia-goers about their own wild backyard. Some themes to guide your research might include:

- When and why these public lands were created.
- How they are used by private interests and the public.
- The threats they face.
- The flora and fauna of the area.
- Which land management agency oversees them, and how.
- How they are affected by climate change.

Have fun and be creative!



Tie Breaker Questions:

Q: In the decade between 1963 and 1973, a slew of environmental legislation was passed protecting American natural resources. But which bill opened the door for the next? Put the following acts in the correct chronological order according to when they were passed: the Wilderness Act, the Endangered Species Act, the Clean Air Act, and the National Environmental Policy Act (NEPA).

A: The Clean Air Act (1963), the Wilderness Act (1964), the National Environmental Policy Act (1969), the Endangered Species Act (1974).

Q: This watershed event was first held in 1970, dreamt up and organized by senators Gaylord Nelson, Pete McCloskey and activist Denis Hayes. The inaugural event drew the participation of 10% of the American population, and, 50 years later, we're still celebrating it every April 22nd. What event am I referring to?

A: Earth Day, of course!