



## **Public Lands & Climate Change 101 PowerPoint**

### **Presentation Guide**

This guide explains the flow and content of the “Public Lands & Climate 101” presentation, which can be tailored to your audience and available time. We recommend you incorporate local examples wherever possible to really connect these issues to your community.

In this document you will find a screenshot of each slide in the PowerPoint, followed by two sections (where appropriate):

- Example language – outlines the concepts you want to communicate to your audience.
- Background information – helps provide a deeper look at the content.

Not all of this information may be needed in your presentation, however it will help guide the discussion for each slide and serve as a resource for you to further elaborate on a concept or cite sources. Please make the presentation your own and share with us whatever content you find most effective.

Don't have the time or venue for a PowerPoint? Consider this as a treasure trove of communication tools that you can incorporate into discussions, activities, or more informal outreach opportunities!



1

**Example language:** Welcome and thank you for coming... share a bit about yourself and your passion for public lands. <Begin Video>



2

**Example language:** As Great Old Broads for Wilderness, we are constantly learning about and caring for our public lands. Today, we'll explore:

- What are public lands?
- How are public lands used?
- How are public lands and climate change related?
- How does public lands use impact climate change resilience?

- How can you get involved in these discussions about public land.



3

**Example language:** Public lands are held in trust for all Americans. These lands are to be managed for the long-term health of the both land and the American people.

Public lands are not evenly distributed across our country, though. The vast majority of public lands are located in the West. How much land are we talking about?



4

**Example language:** If all the public lands of the United States were combined into their own country, they would be the **7th largest country in the world**, just after Australia and larger than India! That's **640 million acres**.

**Facilitation Note:** Important to note that this image is just to illustrate scale, it does not indicate the actual location of public lands.



5

**Example language:** Approximately 5% of the entire United States is protected as wilderness. Alaska contains just over half of that amount.

But only about 2.7% of the contiguous United States—an area about the size of Minnesota—is protected as wilderness.

We like to think of wilderness as our gift to future generations of Americans. Wilderness is a refuge, provides a corridor for wildlife and ensures greater biological diversity. It is untamed forests, deserts,

coasts, and mountains—a respite from a busy world where machines and permanent settlements aren't allowed.

**Sources:** <https://wilderness.net/learn-about-wilderness/fast-facts/default.php>



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**Example language:** So if only 2.7% of the continental U.S. is protected as wilderness, what do the rest of our public lands look like? Are all public lands protected and preserved in their natural condition? No, not exactly. Federal agencies manage public lands for multiple use, from recreation to timber harvest.

Each example of public lands, from local to federal, are managed in different ways for different reasons. Some lands have special

designations that protect them for recreation, conservation, or cultural significance. Other lands are preserved for healthy ecosystems. Within the national park system alone there 28 different types of designations. There are also lands managed for commercial uses such as logging, grazing, and energy development. For instance, about 73% of the publicly-owned land in Western states is grazed, making up about 270 million acres, which is equal to the total acreage of OR, WA, CA, and ID combined.

**Facilitation Note:** Comment on the activities that occur on your community's public lands.

**Source:** <http://people.oregonstate.edu/~muirp/wpubland.htm>



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**Example Language:** In order to really understand why public lands vary from pristine wilderness to oil fields, we have to understand who is in charge. Each federal land agency has unique management mandates, objectives, and policies that guide the way the land is treated. It would take quite a bit of time to fully discuss the role each federal agency holds in managing public lands—we’ll provide a brief overview today.

The Bureau of Land Management (BLM) is in charge of the most federal lands. They manage one in every 10 acres of land in the United States, and approximately 30% of the nation’s minerals.

The BLM has a multiple-use mandate stating that resources and uses on public land must be a balanced combination that will best meet the current and future needs of the people. BLM lands are found in every state and can include forests, mountains, sagebrush prairies, arctic tundra, and deserts.

**Source:** <https://www.blm.gov/about/what-we-manage>

The US Forest Service was established in 1905 to provide quality water and timber for the nation. Congress later directed the agency to broaden its management scope for additional multiple uses and benefits and for the sustained yield of renewable resources such as water, forage, wildlife, wood, and recreation.

**Source:** <https://www.fs.usda.gov/about-agency/meet-forest-service>

The U.S. Fish & Wildlife Service manages the National Wildlife Refuge System. They operate over 70 National Fish Hatcheries and 65 fishery resource offices.

**Source:** [https://www.fws.gov/help/about\\_us.html](https://www.fws.gov/help/about_us.html)

The National Park Service preserves the natural and cultural resources and values of the lands within the National Park System. Their focus is on preservation and education.

**Source:** <https://www.nps.gov/aboutus/index.htm>



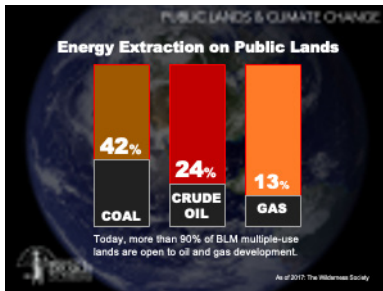
8



**Example Language:** What does protection and multi-use management of public lands really look like in action? To understand the role public lands play in climate change, we must start by looking at carbon balance. The nation’s public lands are home to old-growth forests, wetlands, marshes, and rich soils that store carbon.

When plants perform photosynthesis, they grab CO<sub>2</sub> out of the air and lock up the carbon in the plant’s structure and soils while releasing oxygen back into the atmosphere. We call this a carbon sink because that carbon is sinking down into the earth and getting locked away. This is nothing new—FDR recognized the significance of America’s national forests, calling them the “lungs of our land.” That’s our carbon sink. Meanwhile, through current industrial uses of public lands, ancient carbon is removed in the form of oil and natural gas to be burned. This is a **source** for carbon to enter the atmosphere. If we compare the amount of carbon that public lands store to the amount of carbon we are pulling out of public lands, **what is the balance?** Are our management choices making things better or worse?

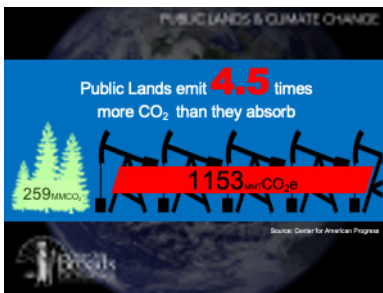
9



**Example Language:** In the last several years, there has been an increase in commercial industrialization on public lands, especially when it comes to oil and gas. When we look at these trends in the context of climate change, we find some startling impacts. Forty two percent of the nation’s coal, 24% of the crude oil, and 13% of the natural gas comes from public lands. It turns out, multiple use on BLM land means that 90% of these lands are open to oil and gas development. Most people are unaware that public lands produce a

huge amount of oil and gas. But what are the impacts of these industrial uses?

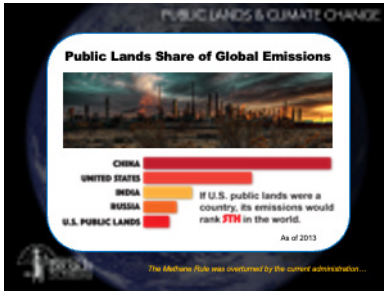
10



**Example Language:** As they are currently managed, public lands emit far more carbon than the ecosystems can sink (or store). Through oil and gas extraction, we are introducing 4.5 times the carbon into the atmosphere than our public lands can absorb. Public lands account for 20% of our nation’s total carbon emissions.

**Background Info:** This statistic applies to the lower 48 and does not include Alaska or offshore drilling in public waters. Source: <https://www.americanprogress.org/issues/green/news/2013/12/05/80277/the-clogged-carbon-sink-u-s-public-lands-are-the-source-of-4-5-times-more-carbon-pollution-than-they-can-absorb/>

[www.americanprogress.org/issues/green/news/2013/12/05/80277/the-clogged-carbon-sink-u-s-public-lands-are-the-source-of-4-5-times-more-carbon-pollution-than-they-can-absorb/](https://www.americanprogress.org/issues/green/news/2013/12/05/80277/the-clogged-carbon-sink-u-s-public-lands-are-the-source-of-4-5-times-more-carbon-pollution-than-they-can-absorb/)



11

**Example Language:** To further put these emissions into perspective, if U.S. public lands were their own country, its emissions would rank 5th in the world.

**Background Note:** The bar representing the United States counts all of the country's emissions including public lands. This is for comparison purposes to visualize how US public lands stack up against the country as a whole.



12

**Example Language:** Public land leases for oil and gas production issued in the last four years **have climbed drastically**. If drilled, these leases could result in emissions from extraction of 1 billion metric tons of CO<sub>2</sub> alone. End-use emissions would result in the release of **5.95 billion metric tons of CO<sub>2</sub>e**.

These leasing decisions have significant and long-term ramifications for our climate and our ability to stave off the worst impacts of global

warming. Emissions from public lands are on track to drastically exceed the level in line with what leading climate science says is necessary to avoid the worst effects of warming.

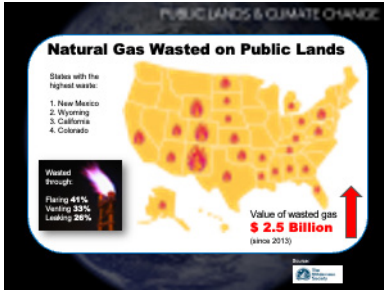
From 2017 to 2020, nearly 10 million acres of public land has been leased for new extraction, an area larger than the state of Maryland. A third of this land is being leased for just \$2.00 an acre.

Even under a conservative “low-development scenario,” where very few land leases are developed for oil or gas production, the potential emissions would still equal the total annual emissions of Brazil. When these non-renewable resources leave public lands, they end up in the atmosphere where they contribute to climate change.

**Source:** *The Climate Report 2020: Greenhouse Gas Emissions from Public Lands* by The Wilderness Society



13



**Example Language:** Industrial use of public lands is not very efficient. The value of natural gas lost to flaring, venting and leaking has been estimated at 2.3 billion dollars since 2013, equivalent to the emissions of 3.3 million cars being driven for an entire year. Much of that waste is intentional, occurring through flaring and venting. The volatile compounds released in this process are known to pose a significant threat to human health.

While natural gas burns cleaner than other fossil fuels when it is captured and burned appropriately, it is mostly composed of methane—a **very** potent greenhouse gas that contributes to global warming.

**Background Info:** You can further explore these methane leaks, their impact on our country and our communities using The Wilderness Society’s interactive online tool:

<https://www.wilderness.org/articles/article/natural-gas-waste-map>

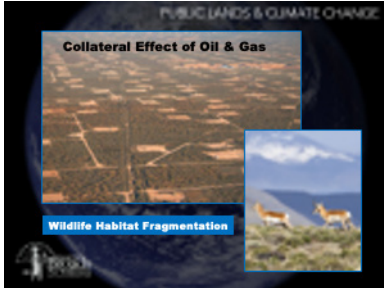
Scientists say the new findings reinforce that methane emissions from oil installations are far more widespread than previously thought.

<https://www.nytimes.com/2019/12/16/climate/methane-leak-satellite.html>

<https://www.bbc.com/news/science-environment-35659947>

<http://theraucousrooster.com/2016/01/24/beyond-the-self-congratulatory-headlines-the-real-jerry-brown/>

<https://www.nytimes.com/2020/02/19/climate/methane-flaring-oil-emissions.html>



14

**Example language:** Beyond carbon emissions, energy development on public land is often devastating to the landscape.

- Disrupts vegetation and soils.
- Water sources can be altered or depleted.
- Transmission lines and roads fragment wildlife habitat and displace wildlife populations.

In densely developed areas, with one drill pad per 10 acres, the pads and infrastructure can destroy up to 175 acres of habitat, the equivalent of 133 football fields, causing both direct habitat loss and indirect harm to wildlife as they **avoid a larger area around the zones of drilling**. A study near Pinedale, Wyoming, observed mule deer behavior before and during oil pad development. They found almost **half of high-use habitat** declined to **medium-low or low-use levels**, pushing wildlife out of the area.

**Source:** Sawyer, H., R. M. Nielson, F. Lindzey, and L. McDonald. 2006. Winter habitat selection of mule deer before and during development of a natural gas field. *Journal of Wildlife Management* 70: 396-403.



15

**Example Language:** Across the West, forests are getting drier and trees are stressed by lower water availability as more hot, dry, and windy days heighten wildfire conditions. In the Pacific Northwest, the size, duration, and number of wildfires are increasing.

It is estimated that human-caused climate change has contributed to an additional 10 million acres of forest fires during 1984–2015. This continuing trend poses a unique challenge to many communities

across the American West, because there are now over 40-million homes in fire-prone landscapes across the region.

**Source:** <http://assets.climatecentral.org/pdfs/westernwildfires2016vfinal.pdf>





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**Example language:** Snowpacks are now in a state of long-term decline—meaning reduced water storage, irrigation shortages, and winter and summer recreation losses. As snowpacks melt earlier, the higher winter streamflow increases the chance of rivers flooding, increasing the need for stormwater management and flood protection. This also results in a lower summer flow, causing conflicts over water resources, reduced hydropower, and negative effects on salmon populations (and other wildlife dependent upon riparian

systems).

Average winter precipitation is expected to increase over the long term, but year-to-year variability in precipitation is also projected to increase. Years of abnormally low precipitation and extended drought are expected, while extreme weather events, such as storms, are also anticipated to occur more often. These can destabilize water management systems.



17

**Example language:** Rising sea levels are impacting shorelines, ecosystems, and coastal human populations. Over the last 100 years, 50% of coastal wetlands have been destroyed due to land use changes, sea level rise and extreme weather events.

while deeply harming and displacing vulnerable coastal communities, including Indigenous groups.



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**Example Language:** These climate impacts can have catastrophic impacts on sensitive wildlife species. Rising stream temperatures, intense storms, and loss of habitat are having catastrophic effects on species such as wild salmon, which are nearing extinction.

More intense winter storms cause higher river flows with more runoff, increasing sediments that can bury salmon eggs and reduce salmon survival.

Meanwhile, decreased summer flows are projected to threaten salmon spawning, compromising salmon hatchery and reintroduction efforts. These impacts could push this vital and iconic species toward the brink of extinction.

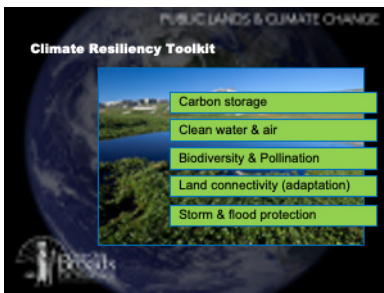


19

**Example Language:** Climate change will eventually impact everybody on the planet. But those impacts are not always felt equally. Climate change has disproportionately impacted **frontline communities** downstream and downwind from public lands—such as Tribal nations, communities who are economically dependent on natural resources, and lower-income communities.

Indigenous ways of life are at risk because they rely heavily on the natural environment in ways that are critical to cultural survival. These Indigenous communities—some of which were the first to draft climate adaptation plans—often have fewer resources to prepare for and cope with climate disruptions.

Air pollution is a powerful example of this disparity. 158 million Americans—nearly half of the country—live in counties where air pollution exceeds national health-based standards. Each year, air pollution causes 200,000 premature deaths.



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**Example Language:** But despite emissions from industrial uses, America’s intact public lands offer much in the way of climate defense. Public lands remove and store carbon, provide clean air and water, serve as a buffer to severe storms, offer large natural areas to serve as habitat, protect biodiversity, and allow space for adaptation to changing conditions. Intact public lands are an irreplaceable part of the climate solution.

Studies show nature-based climate solutions can provide over 1/3 of the cost-effective actions needed between now and 2030 to stabilize warming to below 2 °C.

**Source:** <https://www.pnas.org/content/114/44/11645>



21

**Example language:** Old-growth forests on public lands are the “crown jewel” of nature-based climate solutions. Allowing forests to reach their full carbon sequestration potential on a global scale could provide 37% of the carbon reductions needed to stabilize our climate.

**Background Info:** *This information is sourced from this article: DOI: 10.1002/EAP.2039 Old-growth forests “currently have high*

*above- and below-ground carbon density, high tree-species richness, and a high proportion of critical habitat for endangered vertebrate species, indicating a strong potential to support biodiversity into the future and promote ecosystem resilience to climate change.” Land management can also mitigate the negative effects that climate-induced ecosystem transformations have on biodiversity and watersheds, which influence ecosystem services that contribute to human well-being.”*



22

**Example Language:** Coastal ecosystems are even more efficient carbon sinks, absorbing as much as 10x more carbon per square foot compared to forests. These ecosystems, including oyster beds and seagrass beds, have been shown to reduce waves by 60% during extreme weather events.

Meanwhile, native species buffer rivers from rising summer temperatures and slow down runoff to protect species and

downstream communities from flooding.



23

**Example Language:** Yet many public landscapes are in need of support and restoration to reach their potential. There are many ways that we can improve the health of public lands and contribute to climate resilience when we actively engage in public land stewardship.

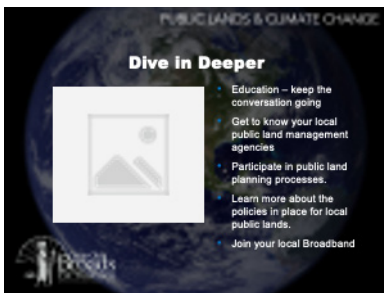


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**Example Language:** Whether we are gathering data, restoring native species, or repairing entire ecosystems, there are enormous opportunities to enhance our landscapes’ natural climate resilience. Our Broadbands have helped restore forests after logging impacts, removed invasive species, and collected water monitoring samples, to name just a few examples.

Learn more about your public lands, learn how they’re being managed, and get involved!

**Facilitation Note:** Plug in your own examples. This is a great opportunity to talk about the work your Broadband is doing. Or describe where your Broadband is growing and taking on new roles.



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**Example Language:** There are many other things that you can do here in your own community to protect and preserve our public lands.

These include:

- Education – keep the conversation going.
- Get to know your local public land management agencies.

- Participate in public land planning processes.
- Learn more about the policies in place for local public lands.
- Join your local Broadband!



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**Example Language:** Visit our website at [www.greatoldbroads.org](http://www.greatoldbroads.org) to find your closest Broadband and find out how you can become involved.

**Facilitation Note:** Offer your audience an invitation to any upcoming events that your Broadband is hosting, thank everyone for their time, and open the floor to questions.