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Communicating about Biodiversity

A Guide from USC Annenberg Center for Climate Journalism and Communication and USC Dornsife Public Exchange

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Scientists, policymakers, and other experts may encounter challenges when communicating about biodiversity loss and gain. A recent study in *Nature* compared media coverage of the UN Biodiversity Conference COP15 with the UN Climate Change Conference COP27 and found that biodiversity issues are underreported in the media compared to climate change[20]. In the following guide, developed by the USC Annenberg Center for Climate Journalism and Communication, USC Public Exchange, Jane Goodall Institute USA and Sierra Club, eight of those challenges are outlined, alongside corresponding solutions.

Context

While anthropocentric changes to our global climate continue to drive extreme weather patterns and weather-related disasters, they are not Earth's only human-derived problems. Throughout our planet's history, worldwide extinction events have fundamentally altered or eliminated entire ecosystems of species[13]. Today, the rate of species extinction and/or extirpation (regional extinction) far exceeds the normal rate of species loss[5]. It has accelerated enough that some have deemed this period the latest extinction event, or the Sixth Great Extinction.

What are the main drivers? Human activities, such as unsustainable conversion of habitats into land unsuitable for wildlife[16] (including animals and plants), the spread of non-native and invasive species and disease, and the illegal trade of wildlife are just a few threats to species in modern times.

(above) New York Wolf Conservation Center Outing – Kaela Jeffers, Sierra Club, 2024
(cover) MoriMori, Adobe Stock

Why Do We Care

"We've lost our connection with the natural world and forgotten that we are a part of it and depend on it. What we depend on are healthy ecosystems — which are these complex, interrelated collections of plants and animals that make up that ecosystem. And I see it as a tapestry. Every time a species becomes extinct, it's like a thread being pulled from that tapestry, and when enough threads have been pulled, the tapestry hangs in tatters, and the ecosystem collapses. And so, we desperately need to regain our relationship with the natural world."

Jane Goodall

Pathways towards climate mitigation and resilience often hinge heavily on helping audiences understand and protect biodiversity. Much of the world's carbon capture relies on diverse ecosystems working harmoniously. Areas that have experienced climate-driven disasters like hurricanes have suffered less in places where biodiversity was protected. We can't successfully comment on or solve one problem without paying attention to the other. This means solutions for both problems have to be collective.

Despite the losses, we also have reasons to celebrate. Individual species and ecosystems are being brought back from the brink of extinction thanks to policies like the Endangered Species Act[9], as well as the diligent actions of caring and compassionate changemakers. When it comes to keeping audiences engaged, success stories in protecting biodiversity, such as saving the majestic California condor or the stately American buffalo, not only inspire hope and action but can also be more tangible markers of progress compared to success stories about fighting climate change.

Bringing attention to any issue in 2025 can prove to be challenging. Here are just a few solutions to help you get started.

1

Challenge: Scope and context of subject matter

Since biodiversity encompasses all life on Earth, it can be difficult to communicate about the topic in simple, approachable ways.

Solution: Biodiversity has different implications (geography, scope, ecosystem type, etc.) and significances for different audiences, therefore refining the key message to suit the target group and its level of awareness is crucial.[21] Storytelling can be a powerful tool to evoke emotions and foster empathy towards non-human species, as well as build connections through relatable characters and storylines. Make biodiversity loss a personal topic for your audiences by giving local examples of biodiversity loss, including any impacts on your community, and tailor the messages to the audience's values, beliefs and experiences. Show them a pathway towards hope through taking a combination of simple and systemic actions.

For example: In Southeastern Oregon, several stakeholders including conservationists, ranchers, and policymakers are trying to protect the region's native sagebrush steppe ecosystems against invasive grasses. To reach conservationists, talk about the sagebrush's importance for wildlife conservation; to reach ranchers, talk about how the native grasses are available all year round for grazing, versus invasive grasses which are only available during a single season; to reach policymakers, talk about how invasive grasses can act as fine fuels during wildfire season compared to native grasses, which are more resistant to fires.

Tip: Ensure that stories are accurate, culturally sensitive, and ethically sound. Misrepresentation of biodiversity issues can lead to misunderstanding, skepticism, or backlash.[17]

2

Challenge: avoiding oversimplification

Poor analogies can hinder understanding by oversimplifying complex environmental issues, leading to misconceptions and undervaluing the urgency or interconnectedness of these issues.

Solution: Use metaphors that emphasize the intrinsic value of organisms (e.g., woodlands that feel like a cathedral); avoid militaristic metaphors (e.g., war on invasive species) as they can often turn audiences away.[11]

For example: Ecosystems can be explained through a game of Jenga. Taking out "organisms" from the ecosystem will weaken the stability of the structure, but taking out a few key organisms will make the structure topple.

Tip: If possible, seek opportunities to conduct preliminary research with your audience so that you can calibrate your messaging with their level of knowledge and awareness. If you aren't able to do your research, even cursorily, seek publicly accessible information or other data that may exist that can help you hone your message tightly.

3

Challenge: inaccessible language

Broadly defined audiences may find the language of biodiversity experts to be too technical and inaccessible.

Solution: Balance scientific accuracy with accessibility (i.e. explain complex ideas in simple words, using clear and easy-to-understand language, photos and graphs and relatable examples).[24]

For example: Instead of saying "loss of bees can lead to ecosystem collapse," say that "loss of bees can reduce the growth of fruits, vegetables and flowers, such as apples, avocados and nuts, which can endanger the animals that rely on them."

Tip: The general understanding of " biodiversity loss" is still limited, and is mainly connected to the loss of individual species. A more holistic perspective, as recommended by science and policy, is often missing from mainstream communication. Future communication efforts should focus on the relationship between habitat destruction and the loss of species to make the topic tangible.

Tip: Biodiversity issues would benefit from a greater activation of public figures as influencers who embrace the cause and can reach diverse, new audiences with their messaging;9 for example, if Taylor Swift or Timothée Chalamet spoke to their audiences about biodiversity during a concert or public speech.

4

Challenge: connecting with other issues

Communicating about biodiversity is challenging because it's deeply interconnected with other environmental issues. Focusing solely on biodiversity risks perpetuating these silos and limiting understanding of the topic's broader significance and potential intersectional solutions.

Solution: Emphasize the combined effects of biodiversity loss, climate change, and pollution (e.g., The UN's triple planetary crisis[13]) and explain how each of these interact synergistically, not independently, of one another.[18]

For example: Deforestation not only threatens the biodiversity of those forests; it also reduces the ability of those forests to store carbon and nutrients. Focus on how biodiversity loss contributes to climate change and increased pollution.

Tip: This is where paying attention to the cultural significance of species as well as issues such as environmental justice can help one another. Many problems affecting marginalized or overburdened communities are inextricably linked with species conservation, and mitigating these problems may drive conservation value for both.

5

Challenge: creating urgency

Biodiversity loss may seem less pressing compared to other issues such as economic crises, political instability, and even climate change.

Solution: Connect biodiversity to the other issues that people are concerned about. For instance, the rising costs of groceries, medicine, and even housing are all linked to the health of our ecosystems. The degradation of habitats and biodiversity has huge implications for human health and economics, and can even lead to political instability and conflict.[17]

For example: Emphasize the economic values of industries such as construction, agriculture and food and beverages, which are highly dependent on biodiversity. 60% of coffee varieties are in danger of extinction due to climate change, disease and deforestation, and extinction would endanger the global market and businesses of small farmers[12].

6

Challenge: overcoming the "attractiveness" factor

Public interest, science and media tend to favor more "attractive-looking" species.

Solution: Educate the general public, community scientists and nature enthusiasts on the importance of **all** species they encounter, and promote the aesthetic, ecological and spiritual value of organisms regardless of their appearance or rarity.[22] Include language that promotes the importance of "all" species, and visuals that depict species beyond "charismatic species." Identify a mascot or ambassador species that can "speak" for the broader ecosystem and all its species, particularly a focal species for conservation that may not be immediately attractive to your audiences.

For example: The blobfish, known as the world's ugliest fish is in danger of extinction.[4] Several campaigns have tried to defend the blobfish from such reproof, highlighting its unique anatomy, and turning it into "the mascot of the ugly and proud."[26] These campaigns have mustered support for other animals that are considered ugly through the Ugly Animal Preservation Society[3].

Tip: Prioritize the intrinsic values of nature by following leverage points centered around the values of nature[14]: (1) Identify more diverse values of nature; (2) embed diverse values when making decisions in existing legal and political structures; (3) reform structures to normalize inclusion of diverse values; (4) transform social norms and goals such that people view "progress" or a "good life" in terms of their relationships with nature.[21]

Tip: Exposure to the natural world through citizen science biodiversity projects can fill data gaps and increase public awareness about the value and benefits of all organisms.[23]

7

Challenge: countering doom-and-gloom

Doom-and-gloom messaging can lead to negative emotions, audience disengagement and issue fatigue at a time when motivation, engagement and positive action are required.

Solution: Research shows that negative messaging can dissuade audiences from taking action.[2] Messaging should focus on solutions and the potential positive benefits of taking action, highlighting the role of collaborations and conversations as useful activities. Instead of communicating about the direct and indirect impacts of biodiversity loss on human well-being, economy and ecosystem services, effective messaging strategies should focus on the resilience of biodiversity and its ability to recover and provide ways for the audience to take action to help conservation efforts.[18] Highlight stories that show main characters your audience can identify with, so they can imagine themselves taking similar actions in their own lives.

For example: Focus on the positive impacts of solutions such as "stem cell transplantation in coral reefs can help heat-damaged reefs survive," versus facts such as "97% of coral reefs have died in the Northern Great Barrier Reef."

Tip: Support audiences' journey towards understanding the issue in the following ways: (1) think of common associations the general public may have; (2) clarify what is happening to whom and why; (3) balance threats with positive actions or solutions; (4) avoid typecasting; (5) be open about failures to protect endangered organisms as a learning experience.[7]

8

Challenge: connecting with diverse audiences

Communicating with diverse audiences can be challenging.

Solution: If you are working with a new community, try to build trusting relationships first by listening and learning about them and their cultural context. Try to understand barriers to their involvement in conservation, or drivers of unsustainable behavior. Then, use inclusive communications approaches, such as producing materials/videos and hosting events in multiple languages; employing inclusive and culturally sensitive messages; and collaborating with community leaders to employ local communication channels and strategies that help break down or minimize these barriers and offer alternative, more sustainable behaviors.

For example: Through the Jane Goodall Institute's community-centered Tacare program in Western Tanzania, communities implemented a multi-channel campaign with lead farmers and government officials to promote composting as a way to enrich soil and improve yields, as well as the health and economic wellness of communities. This came after a socioeconomic study was conducted on communities that were increasingly converting forests into farmlands. The message spread through the campaign did not immediately focus on biodiversity protection, but instead focused on the intrinsic values and needs of the community.

Tip: Involving Indigenous communities in biodiversity conservation initiatives, respecting their traditional knowledge, and co-designing strategies based on their insights supports inclusivity and enriches conservation efforts.[22]

Here are seven ways experts can frame biodiversity issues:

Loss and gain framing:

Present information in terms of potential losses or gains.

How to use: In biodiversity conservation, a loss-framed message may emphasize the species and habitats that could be lost due to inaction, while a gain-framed message may highlight the species and habitats that could be saved through conservation efforts.[1]

For example:

Loss: 33% of North America's biodiversity has been lost since 1970.

Gain: The United States has brought back from near-extinction species such as the California condor, grizzly bear, Okaloosa darter, whooping crane, and black-footed ferret.

Tip: In biodiversity conservation studies, gain framing is generally considered more effective than loss framing, due to its greater impact on behavioral change[8].

"Fortunately, nature is amazingly resilient: places we have destroyed, given time and help, can once again support life, and endangered species can be given a second chance. And there is a growing number of people, especially young people, who are aware of these problems and are fighting for the survival of our only home, Planet Earth."

Jane Goodall

Whooping cranes refuge Texas
Photo: Diane Nunley, U.S. Fish and Wildlife Service

Spatial framing:

Presents biodiversity conservation issues in a local or distant context.

How to use: Local framing may highlight the impacts of biodiversity loss in the audience's immediate environment, while distant framing may focus on biodiversity issues in far-off locations. The effectiveness of spatial framing depends on the audience's sense of place and perceived connection to the local or distant environment.[24]

For example:

Local: For generations, it was common to see waves of common nighthawks circling towns along the Mississippi Flyway. Now, it's rare to find these birds as the population has plunged in recent decades due to factors such as habitat loss and pesticides.

Distant: Two-thirds of polar bears in the Arctic can die out if we continue with our current rate of emissions of greenhouse gasses.

Tip: Distant contexts tend to be less effective than local contexts in driving behavioral and social change, as it is harder for people to connect with distant issues. However, distant impacts of climate change tend to be considered more severe than local impacts.[27]

"The people understand that protecting the forest is not just for wildlife but for their own future, and so they have become our partners in conservation."

Jane Goodall

Nighthawk
Photo: Natalia Kuzmina, Adobe Stock

Temporal framing:

Emphasizes the impacts of biodiversity loss or conservation in either the immediate (short-term) or future (long-term) context.

How to use: Immediate framing underscores the current effects of biodiversity loss, such as habitat loss or climate change impacts. Conversely, future framing highlights the potential benefits of conservation actions, such as preserving ecosystem health, preventing species extinction and mitigating climate change. This framing can influence perceptions of urgency and importance.

For example:

Short-term: If we stop buying rhino products and write to our legislators to support anti-poaching efforts now, we can prevent rhinos from going extinct, which they are predicted to be by the end of this century.

Long-term: Lab-grown meat is a good way to reduce livestock impacts on the environment and rewild pasture fields with native flora and fauna. While researchers should invest time in it, it may not become a viable solution for decades.

Tip: In biodiversity conservation messaging, contrasting the immediate costs of conservation actions with the long-term benefits for biodiversity and ecosystem health can be a powerful tool.[24]

"We must remember that we have not inherited this planet from our parents, we have borrowed it from our children. But we have not been borrowing their future, we have stolen it and we keep stealing it."

Jane Goodall

Native wildflowers
Photo: Mark Baldwin, Adobe Stock

Economic and utilitarian messaging:

Emphasizes the economic benefits of biodiversity conservation.

How to use: Show that biodiversity contributes to the economy by providing ecosystem services, such as medicine and food for humans, carbon sinks as well as land for pastures. These services are essential for human well-being and economic development.

For example: The agriculture industry relies heavily on pollinators, like bees, for crop production. The loss of these species, along with deforestation and unsustainable land, disrupts this industry which contributes roughly $1.5 billion to the U.S. economy.

"'I see what you're saying about the link between nature's resilience and human resilience,' I said. 'How addressing human injustices like poverty and gender oppression makes us better able to create hope for people and the environment. Our efforts to protect endangered species preserve biodiversity on the Earth—and when we protect all life, we inherently protect our own.'"

Jane Goodall

Bee, Arizona
Photo: Ana Gorla

Behavior-focused messaging:

Encourages pro-environmental behaviors by promoting the benefits of such behaviors. Discourages behaviors that do not benefit the environment by highlighting the disadvantages of such behaviors.

How to use: Providing actionable steps is essential to behavior-focused messaging strategies. This involves giving individuals and communities clear and specific actions they can take to protect biodiversity.

For example: To prevent biodiversity loss in your community, you can plant native species in your garden, reduce your use of chemicals, support local conservation efforts, be a responsible pet owner, volunteer for restoration projects, educate others about local wildlife and make conscious choices about the food you buy – prioritizing locally grown and organic options.

Tip: Research has shown that when individuals are provided with specific, achievable actions, they are more likely to engage in pro-environmental behaviours.[24]

"It is important to take action and realize that we can make a difference, and this will encourage others to take action, and then we realize we are not alone and our cumulative actions truly make an even greater difference. That is how we spread the light. And this, of course, makes us all ever more hopeful."

Jane Goodall

Child watering garden
Photo: Rawpixel.com, Shutterstock

Alternative Behavior Framing

Promotes and/or removes barriers to pro-environmental behaviors without directly addressing biodiversity.

For example: By composting food scraps from your kitchen, you can create fertilizer for your garden and grow healthier produce, saving money on food. You can also contribute the compost to an urban farm and benefit from their produce.

Tip: Influencers can increase the "cool factor" of alternative behaviors by practicing them themselves and showcasing them for their community, turning them into social norms by building momentum.

"I like to envision the whole world as a jigsaw puzzle… If you look at the whole picture, it is overwhelming and terrifying, but if you work on your little part of the jigsaw and know that people all over the world are working on their little bits, that's what will give you hope."

Jane Goodall

Compost kitchen
Photo: Daisy Daisy, Shutterstock

Hope & Action-Based Framing

Illustrates positive outcomes for biodiversity by sharing the successes of individuals who care and have shown value-aligned engagement in conservation activities.

For example: David Attenborough's biodiversity documentaries have reached wide audiences and won numerous awards, popularizing natural history in mainstream culture. His work has been so inspirational that over 20 species have been named after him. He was also knighted by Queen Elizabeth II and was awarded the Order of Merit for his broadcast and conservation work.

Tip: Invite value-aligned members of the community to share their own journeys: how they started, what motivated them to change, and the success they met with. This helps your audience see themselves in the story of success, increasing their belief that conservation behavior is worthwhile and that they, too, are likely to be successful should they engage in such behaviors.

"Hope is often misunderstood. People tend to think that it is simply passive wishful thinking: I hope something will happen, but I'm not going to do anything about it. This is indeed the opposite of real hope, which requires action and engagement."

Jane Goodall

Military Outdoors Citizen Science
Photo: Kyle Grillot

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