



How to Talk About Climate Change and Oceans A FrameWorks MessageBrief

This brief summary draws from FrameWorks' research on public perceptions of climate change, oceans and other environmental issues over the past decade. This work includes both qualitative and quantitative research, including cultural models interviews, focus groups, media content analyses and experimental surveys. It is further informed by FrameWorks' judicious attention to the work of opinion scholars.

Situation Analysis

Americans believe climate change is real and that there are severe negative consequences associated with global warming. They do not need further convincing; what they need instead is a deeper understanding. Because of their lack of foundational knowledge about the process, they can easily become skeptical of what they view as political posturing, scientific overstatement or environmentalist exaggeration. This leads them to disengage or to embrace solutions that are ineffective.

They are able to point to numerous phenomena where climate change appears to be at work already, in places near and far (my garden, the polar bears, etc.). *They do not lack for examples.*

They are *unsure when the large-scale impacts of climate change will be felt*, but more than a third of the population believes the harmful impacts lie beyond 25 years.

They remain woefully *ignorant of how exactly global warming works* and easily confuse the process with the ozone hole, pollution, littering/recycling and other distracting or unrelated environmental problems.

Because they are relatively unfamiliar with greenhouses, *they do not easily grasp or repeat the idea of greenhouse gases.*

There is a broad consensus that *they would like to secure more information* about climate change and, at the top of the list of trusted sources about global warming are scientists.

When environmentalists *deliver a crisis message, support for policies and programs to address*

climate change plummet. This effect is eliminated, however, when environmentalist explain science. By contrast, when ordinary people talk about stewardship and responsibility as the values that should guide climate change policy, support increases significantly.

Some aspects of scientific presentation, however, are difficult for ordinary people to accept. This includes scientific modeling, which they believe to be often in error, and any data outside observable time. *When scientific data is presented in ways that seem exaggerated or overstated, Americans become more skeptical* of claims about the origins of the problem and more likely to believe that the problem could be natural and not anthropogenic.

Americans expect a discussion of climate change to be unpleasant and depressing, and they would avoid it if possible, as they also expect it to make them feel guilty for not doing something, but they aren't exactly sure what.

They are *often cynical about the solutions presented to them,* as these are often seen as either too small to address the enormity of the problem (changing light bulbs) or too far beyond their reach (switching to unavailable sources of energy).

While many Americans say they would sacrifice to address climate change, they suspect that corrupt officials and selfish citizens would not. They *have rarely seen broad-scale support* for solutions to inspire their confidence.

Compound this problem with the fact that most *Americans have very little understanding of oceans and lack a way to conceptualize them,* and you have a condition ripe for manipulation and disengagement. In a sample of national news, only 11% of coverage about oceans connected causes and effects of the problem.

Connections between global warming and oceans are not top-of-mind. When people are forced to discuss problems affecting oceans, *they focus on discrete incidents* (not longstanding patterns of abuse or damage to ocean systems), *accidents* (the Valdez) *or observable surface problems* like beach litter or run-off from boats. The solutions most top-of-mind are after-the-fact clean ups, not preventive measures.

News media *tend to pit environmental health against economic health in a zero-sum game.* There are few explanations of how human livelihood and well-being is reliant on environmental sustainability. This tendency is often magnified by the fact that there are few humans in these stories who are not victimized by choices made that benefit animals or the environment over humans. This tends to set up a utilitarian assessment of oceans, in which oceans are subservient to human exploitation.

While people readily connect oceans to the beauty of the earth, this *aesthetic appreciation often serves as a stumbling block to getting "under the water"* and understanding that ocean systems are being disrupted in ways that render the oceans dysfunctional.

While it is not top-of-mind, *the idea that oceans are a public resource is widely shared* and

deeply held by Americans. This is not an issue where people believe that private entities can step in for governments. Oceans need to be protected by laws of the sea that constrain governments internationally. At the same time, this requirement for international cooperation and consensus can spur Americans to cynicism, as they do not believe other countries will actively promote the common good at the expense of global competition.

People tend to disconnect land and human experience, on the one hand, from water and alien life, on the other. These appear *separate and distinct realms* for most people and it is difficult for them to see how oceans might be affected by trends on land, except at points of confluence like coastlines.

There is a “*drop in the bucket*” problem when people equate ocean problems with pollution. When this occurs, the ocean is often deemed capable of healing itself because of the size of the water mass compared to the relatively small volume of pollutants.

Ocean creatures are often depicted anthropomorphically, which further invites Americans to apply familiar standards of individual responsibility to them. Because they are often *disconnected from their habitats*, Americans struggle to understand what might diminish fish populations, for example, apart from overfishing or some sort of natural decline. The fact that creatures exist within land and sea systems that are both affected, and often synergistically, by climate change is not yet part of Americans’ working understanding of how the world works.

Key Communications Challenges Based on Insights from the Research

Across the research, there were four consistent frame challenges that must be addressed consistently in all messaging about climate change and oceans:

Connecting the Environment to larger values the society holds and to larger systems in which humans see themselves. By using Values and Causal Series, communicators can overcome the tendency for these issues to be seen too narrowly, which tends to limit the constituency.

Using Science to Make Visible the Processes that define global warming and systems disruptions in oceans, not merely a list of effects. And these processes need to be understood as disrupted or broken, not merely ugly (dead zones) or dirty (pollutants). When the process is made clear – especially when Simplifying Models are used to anchor understanding – people are somewhat inoculated against false claims.

Explaining the Human Causes and Solutions that can help people acquire a sense of agency over the problem, especially those that are not limited to individual, consumer decisions.

Avoiding the Crisis Frame, that tends to shut down thinking, as well as such common tropes in public conversation as the dueling viewpoint which invites skepticism and rhetorical tone which incites distrust.

Avoiding the Argument Culture, that tends to portray all socio-political and scientific issues as debates between two sides. Science communicators should acknowledge that there are many differences in opinion about the exact presentation and timing of effects, while focusing people's attention on the underlying science of the process. By admitting that there may be many ways to solve the problem, and this is a task for human ingenuity, you allow for diversity of opinion.

Translating the Challenges into Successful Practice: Essential Elements for Reframing

In order to help Americans appreciate what is happening to the oceans as a result of climate change and how this might be addressed by actions we take together, the issue will have to be reframed to induce more systems thinking, to connect humans to the environments and chain of life that affect us, and to emphasizing causes and solutions, not merely impacts. Science and science teaching can make valuable contributions to American thinking because: (1) the tone of science teaching gets out of the doom-and-gloom media or contentious political conversations; (2) the explanatory nature of science thinking invites inquiry and evidence; and (3) science routinely explains itself in terms of homely metaphors and other everyday analogies that can help overcome some of the "cognitive holes" in current thinking about oceans and climate change. The following recommendations emerge from FrameWorks' research over time as promising strategies to use. Where research was not available, we have borrowed terms from the scientific literature that seem to hold promise for conveying fundamental scientific principles in highly concrete ways.

Values

Innovation.: We can invent new ways to address global warming that also prove beneficial to our health and our economy. Since humans cause it, by burning too much of our fossil fuels, humans can also fix it. It requires a big effort, but many of the technologies and needed skills are available. Many are being developed right here, by scientists in the U.S. We should direct business and government to support innovation and phase out practices that contribute to global warming.

Responsible Management: When we identify a problem, we should figure out how to fix it. It is irresponsible for our country to ignore the problem of climate change when we know what needs to be done. We should do the right thing by putting in place a long-term plan for reducing our country's contribution to global warming. Dealing with the problem rather than letting it get worse is the responsible thing to do, so sensible policies that minimize current damage and prevent future damage to the environment from over-use of fossil fuels should be our top priority.

Stewardship: Many people share the belief that the earth is a special gift and we have an obligation to protect the environment for future generations. Exercising responsible stewardship means addressing problems and risks as they occur, not waiting till the problem has become worse. We can be better stewards of the earth by correcting the environmental problems we have

caused, investing in sustainable practices, and doing a better job in the future of stewarding our natural resources.

Interconnectedness: Our fate is intertwined with the fate of oceans. Water is the basis for all life and ecological function. What happens in the oceans reflects and affects what happens on land: it's one interactive system. By recognizing the connection between human practices and their impacts on marine life and habitats, we can do a better job of leaving the oceans in good shape for the next generation.

Heat Trapping Blanket of CO₂ Simplifying Model

Global warming is caused, in part, by the man-made blanket of carbon dioxide that surrounds the earth and traps in heat. It is thickened by burning large quantities of fossil fuels – coal, oil and natural gas. By burning these fossil fuels, we release Carbon Dioxide (CO₂) into the air where it builds up, the globe warms and the atmospheric balance that keeps the climate stable is disrupted.

Oceans as Heat Sink Simplifying Model

One of the main services the oceans provide the planet is to function as our largest Heat Sink, regulating our climate by absorbing, storing and then slowly releasing large quantities of heat. In this way, the oceans buffer the climate of nearby landmasses and, eventually, of the entire planet.

Putting It All Together

Just like we do in other aspects of our life, when we approach environmental issues, we need to clean up the messes we've made, learn from our mistakes and figure out how to invent new ways to leave the world a better place for the next generation. To do this, we need to recognize that we are as much a Blue Planet as a Green Planet. Water is one of the main reasons that life has flourished on earth, and not on other planets in our solar system. Water in its liquid form is the basis for all life and ecological function. What happens in the oceans reflects and affects what happens on land: it's one interactive system, so we have to study the interactions between land and ocean systems.

Right now, scientists tell us that the natural functions that the ocean performs for our planet are being disrupted by global warming. And, while not all scientists agree on when certain effects from global warming might occur, most scientists agree on the basic mechanism that is disrupting the natural heat-regulating functions of our planet. As you may know, global warming is caused by a man-made blanket of carbon dioxide that surrounds the earth and traps in heat. That heat-trapping blanket is largely caused by humans burning large quantities of fossil fuels – coal, oil and natural gas – over the last couple of hundred years. The heat-trapping blanket is disrupting the natural systems that have let heat out of the atmosphere.

As our planet heats up, the oceans cannot perform their vital functions – they are disrupted. For example, one of the main services the oceans provide the planet is to function as our largest Heat Sink, regulating our climate by absorbing, storing and then solely releasing large quantities of

heat. When too much CO₂ is burned, however, the oceans cannot keep up. And this, in turn, has devastating effects on the chain of life. Habitats are destroyed by bacteria in the warming waters, marine life are unable to reproduce normally because of the incubation temperatures that affect sex distribution, and the overall chemistry of the ocean becomes unbalanced in ways that negatively affect the developing sealift, such as making shells more brittle.

Inventing ways to address this challenge is the work of science. We must invent better ways to harvest our forests, heat our buildings and protect our oceans. Doing this is a challenge to our ingenuity but a challenge we must meet, for ourselves, for our children and for our continued enjoyment of our home on earth.

DON'T

- Start with the Crisis frame
- Layer on effects
- Use a rhetorical or argumentative tone
- Engage in a political battle that aligns the issue with ideology
- Reserve solutions for late in your communication
- Focus in narrowly on familiar and sympathetic creatures and terrains, without connecting them to processes and context
- Express the timeline beyond recorded history

DO

- Start with a commonly held Value
- Explain how scientific processes actually work, using metaphors and simplifying models
- Connect causes to consequences using Causal Series
- Explain the problem as one of disrupted systems
- Use a practical tone or a spirit of scientific inquiry
- Admit the scientists are engaged in exploring many solutions to the problem, but are in agreement about the fundamental mechanism that is causing the problem
- Surface solutions symbolically, high in your explanation, so that people understand that solutions exist
- Help people see that solutions require both collective action as citizens as well as individual actions as consumers

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