CHASING CORAL

DISEASE

Screening Field Guide

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DISCUSS

Facilitating a discussion post-screening

In this section, you will find:

I. QUICK START GUIDE: LEADING A DISCUSSION

This guide is your cheat sheet with key facts and top discussion questions

II. DEEP DIVES: QUESTIONS AND FACTS TO SPARK DIALOGUE

Conversation primers - pick one that supports your goal and guests' interests

1. The magic and mystery of coral
2. The heated relationship between climate change and coral
3. The path to a cleaner, greener future

III. GREAT CONVERSATIONS: DEBRIEF TIPS

Tricks for keeping different types of groups engaged, excited and energized

QUICK START GUIDE: LEADING A DISCUSSION

Suggested talking points, from first introductions to closing remarks

1. INTRODUCE YOURSELF AND THE FILM

"Hello everyone, and thank you for coming. I'm so excited to share this film with you because... (e.g. my involvement with…, my connection with…, my passion for…, etc.)

Chasing Coral is an ocean adventure film. It reveals the story of a team of photographers, scientists and other experts who discover and try to capture one of the world's largest coral bleaching events. It took 3.5 years to make and features over 500 hours of underwater footage with submissions from over 30 countries.

The film is about 90 minutes long and we'll be watching all the way through to enjoy *Frozen's* own Kristen Bell sing the final song and another special surprise. So, turn off those cell phones, the bathroom is down the hall on the left, and enjoy!"

2. KICK OFF YOUR POST-SCREENING DISCUSSION

Quick facts to help spark conversation:

- The full environmental and economic value of coral reefs is estimated at **$375 billion** per year
- **93%** of the heat trapped in the atmosphere is absorbed by the ocean, with sea surface temperatures rising at an average rate of **0.13°F** per decade since 1901
- In the 2016 global bleaching event, we lost **29%** of the Great Barrier Reef

Start with general questions about reactions to the film before moving to specifics.

- What did you learn from the film about coral bleaching, oceans or climate science that was new to you?
- Has your local city or neighborhood experienced any effects of climate change? Do you know anyone who has experienced climate change impacts firsthand? (First offer your own example to prime guests).
- What is one step you can take to combat the effects of climate change in your community?
- What would you like to tell an elected official in your town, country or world about climate change?

> **Check out the Deep Dives to learn more about coral, climate change, and clean energy.**

3. COMMIT TO ACTION

Use the Act primer to share and select an action to take either individually or as a group. Here are a few options:

- **Expand the conversation:** Share the film with 5 more people. If everyone hosts their own screening we can make sure the global bleaching event in the film does not go unnoticed.

- **Help accelerate our transition to clean energy:** Use your voice to call, email or tweet at your city or state leaders to let them know clean energy matters to you. Take the next step and join a local campaign promoting clean energy such as 350.org, Sierra Club or The Nature Conservancy.

- **Support coral preservation efforts:** Rally behind the Great Barrier reef by calling for a ban on new coal plants or, if you live by a reef, continue our global call for local bleaching reports by sharing them with Richard Vevers' 50 Reefs initiative.

4. SHARE THE MOMENT

Make your commitment to action a memory. Take a photo of your group and share it online using #ChasingCoral.

5. FOLLOW UP

Whatever action your group decides on, send a reminder email to your invite list and keep people updated as you celebrate successes. And don't forget to email us all the updates, photos and impact details at impact@chasingcoral.com.

DEEP DIVE 1: THE MAGIC AND MYSTERY OF CORAL

A discussion primer on the importance of corals

"I have the upmost respect for corals. I think they've got us all fooled. Simplicity on the outside doesn't mean simplicity on the inside."

- Dr. Ruth Gates

DID YOU KNOW?

25% of the marine life in the ocean depends on coral reefs

We've lost **50%** of the world's corals in the last 50 years

The full environmental and economic value of coral reefs is estimated at **$375 billion** per year

Less than **1%** of people ever get to experience coral reefs in person. spend time exploring coral reefs in their lifetime

QUESTIONS TO START THE DISCUSSION:

1. What were you most surprised to discover about coral reefs?
2. If you knew something about coral bleaching before the film, how has your impression changed after seeing the film?
3. In what ways are corals/the ocean important to our community?
4. In the film, you heard the voice of many scientists. Who else is or needs to be communicating about what's happening to coral reefs?
5. What is your vision or hope for corals and the ocean for future generations?
6. What actions can we take as individuals and as a community to preserve coral reefs?

The latest update: In Chasing Coral, we learned that in 2016 we lost 29% of the corals on the Great Barrier Reef. In 2017, we unfortunately had an equally devastating bleaching event with the updated data to be shared in the coming months.

FURTHER EXPLORATIONS ON THE SUBJECT:

The ocean is one of the earth's final frontiers.

We know more about the moon than our oceans. We've only explored 5% of the ocean, meaning that there is so much more to discover. Those discoveries could be valuable to us all.

Organisms that live on coral reefs are major sources of new drugs, including treatments for cancer, arthritis, asthma, AIDS, and other diseases. The cone snail, for example, may be small but can provide some serious pain relief.

Imagine what else we'll discover as we continue to explore what's under the waves.

Corals have huge environmental and economic value.

At least half a billion people directly rely on healthy coral reefs for food and livelihood.

Coral reefs provide habitat for fisheries, create tourism opportunities and provide natural protection from big waves that cause coastal erosion.

The full environmental and economic value of coral reefs is estimated at **$375 billion per year.**

Corals are in hot water, and we need to help.

Scientists around the world are taking action to save corals for the future. Some are collecting the "seed banks" to preserve the biodiversity of the corals. Others are designing reef restoration projects or examining how to genetically alter corals so that they can be more resilient.

Ultimately, we're trying to preserve these fragile ecosystems the best we can, while we also focus on the larger solution: accelerating climate action.

RESOURCES TO LEARN MORE:

Corals are some of the world's most mysterious creatures. While we're constantly learning more about these fascinating animals, check out these resources to learn about what we do know now:

- **HHMI Interactive science education materials:** A resource for a host of free science education resources from coral bleaching activities to biodiversity in the age of humans.

- **Smithsonian Ocean Portal.** An interactive and educational web platform about corals, coral reefs, symbiosis with educational tools and resources for educators.

- **Coral Seed Banks.** Science Friday podcast: Marine biologist Mary Hagedorn aims to bank as many corals as possible for future restoration and research.

- **National Marine Sanctuaries.** Take a virtual dive.

- **Coral City.** Watch this mesmerizing video about corals in Miami by our friends at Coral Morphologic.

- **Reviving the Ocean Economy: The Case for Action, WWF.** This definitive report by the World Wildlife Fund examines the economic value of the world's oceans putting the value of $24 Trillion on ocean assets and function.

- **50 Reefs.** Continue on Richard's journey. A new initiative dedicated to the protection of coral reefs through conservation and investment with an eye toward repopulation of coral reefs over time.

- **TNC Reef Resilience.** The Reef Resilience Toolkit provides the latest information, guidance, and resources to help managers address the impacts of climate change and local threats to coral reefs.

DEEP DIVE 2: THE HEATED RELATIONSHIP BETWEEN CLIMATE CHANGE AND CORAL

A discussion primer on the importance of corals

"Coral is a fundamental part of a huge ecosystem. It is, in a way, just like the trees in a forest. If coral reefs are lost, we're affecting the life of a quarter of the ocean."

- Dr. Justin Marshall in Chasing Coral

DID YOU KNOW?

93% of the heat trapped in the atmosphere is absorbed by the ocean

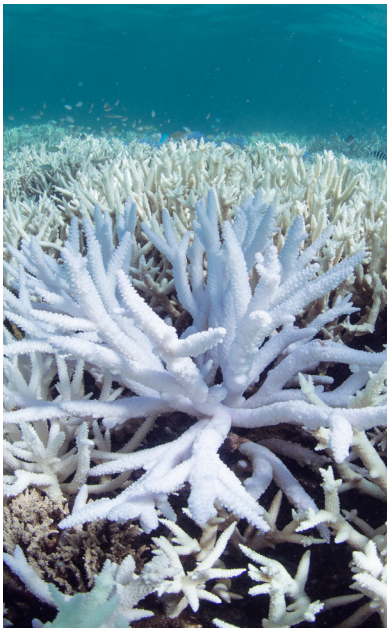
The average temperature on Earth is **58 °F** (14.4 °C). If the ocean wasn't absorbing the heat content from carbon emissions, the average temperature of the planet would be **122 °F** (50 °C)

At this rate, within the next 25 years, ocean temperatures will become too warm for corals to survive

QUESTIONS TO START THE DISCUSSION:

1. How does photography contribute to our scientific understanding of climate change? Are these images scientific evidence or a point of view?
2. We know fossil fuels are a finite resource, and that they cause harm. Why is it hard to stop using fossil fuels?
3. How do you see the effects of climate change in your community?
4. What actions do you believe might be most powerful to slow or reverse climate change?
5. Have you taken any steps to reduce your carbon footprint?
6. What are examples of the non-environmental consequences to a changing climate (e.g., economic impact)?

FURTHER EXPLORATIONS ON THE SUBJECT:



What's coral bleaching? And what's causing it?

Corals are incredibly complex, and need very specific conditions to survive. If their environment gets too hot, the coral animal bleaches white, and is likely to die.

Why does this happen? It basically comes down to how the coral gets its food. The algae that lives inside coral tissue is also its most important food source. The catch is that those algae rely on a narrow range of temperature. If the water gets too warm for too long, the algae freak out and begin producing toxins rather than food.

When this happens, the corals get rid of the algae as fast a possible (just like humans with a bacteria). This is called bleaching because all that is left is the transparent tissue and the bright white skeleton underneath.

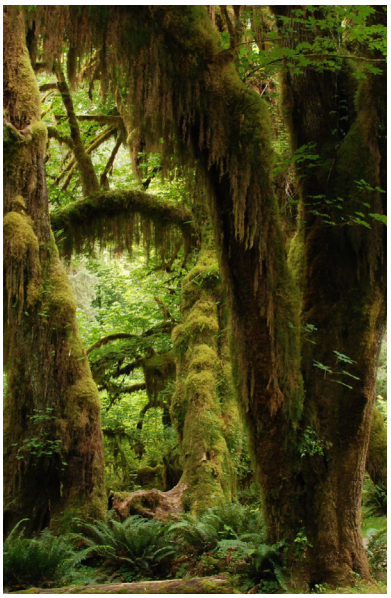
Photo credit: XL Catlin Seaview Survey

What's climate change got to do with coral bleaching?

There are two important facts here. First, carbon dioxide released by burning fossil fuels (like coal, oil and gasoline) is the single biggest cause of the warming of our atmosphere. Second, 93% of the heat from the atmosphere is absorbed by the ocean. Yes, 93%!

"It's a bit like putting extra wool in your sweater," said our chief scientific advisor, Dr. Ove Hoegh-Guldberg. If there's more heat than marine life can tolerate, we see corals bleach, and then the major impacts on the ecosystems that depend on them.

So, if you want to see the impact of climate change, take a look under the waves. What you'll find will give you a good sense of what lies ahead.



From changing corals to melting ice, what are some of the other climate impacts we're seeing?

Chasing Coral and *Chasing Ice* shared what's happening under the waves and in the arctic, but unfortunately, other ecosystems are also facing new challenges.

For example, Canadian grasslands have the highest concentration of species at risk, the Amazon rainforest is experiencing drastic changes to its rivers and lakes and the Middle East continues to face exacerbated droughts.

From sea-level rise to droughts to flooding, we're all experiencing the impacts of climate change in our own backyards -- a reminder of the ever-more urgent need to accelerate climate solutions today.

RESOURCES TO LEARN MORE:

Educational materials on coral bleaching:
HHMI Interactive science education materials: A resource for a host of free science education resources on coral bleaching activities and other interesting topics.

More reading on climate change:

- Short Answers to Hard Questions About Climate Change
- Tips for conversing with climate skeptics.
- 14 Easy Ways to Reduce Your Carbon Footprint.
- Paris agreement's 1.5C target 'only way' to save coral reefs, Unesco says

What to watch next:

- Chasing Ice
- From the Ashes
- Racing Extinction

DEEP DIVE 3: THE PATH TO A CLEANER, GREENER FUTURE

A discussion primer on climate solutions, and the possibilities ahead

"This is inevitable, this great transformation, and that's what makes me so optimistic, is -- all we gotta do is give it a bit of a shove."

- Richard Vevers from Chasing Coral

DID YOU KNOW?

With an annual growth rate of **20%**, solar and wind power are creating jobs 12 times faster than the rest of the U.S economy

It is projected that by 2020, over 25% of global electricity will be produced from renewables, a **50%** increase from 2012

Nearly **7,500** cities worldwide have joined the Global Covenant of Mayors for Climate and Energy, committing to a green, low emissions and resilient economy

QUESTIONS TO OPEN UP DISCUSSION:

1. What are the top three things you can do as an individual to advance climate solutions?
2. What kinds of climate solutions make the most sense for your community?
3. Where can you find win-win situations to accelerate clean energy in your community? (Examples include installing PV panels or joining a community solar project to save on your energy bill).
4. How are decisions about energy, transportation and development made in your town?
5. How can we together reach local decision makers with messages to support and accelerate climate solutions?

FURTHER EXPLORATIONS ON THE SUBJECT:

How do we limit the earth's warming?

We need to reduce our carbon emissions, by accelerating climate solutions that benefit us all.

Fundamentally, that means we need to advance the process of making clean energy widely available. Which means it needs to get cheaper.

How do we make these technologies cheaper? We scale them.

In short: as with any technology, prices drop as the industry grows, which means we need to make our demand loud and clear.

Photo credit: UNclimatechange

There are many exciting new innovations and technologies. We need to accelerate them, and fast.

There's lots of positive change. The cost of solar and wind power, electric vehicles and energy storage is going down.

In his 2017 book Drawdown, Paul Hawken describes 100 solutions that are feasible, affordable and can be scaled to meet mass demand such as rooftop solar panels, auto-tinted smart glass, fuel efficient air transport, marine permaculture and bioplastics.

And perhaps the most important innovation of all: changing how we think. Rather than pointing fingers, our collective embrace of the opportunities ahead is what will ultimately fuel this great transformation.

Photo credit: mma Gilchrist, DeSmog Canada

A global movement and you.

At the highest level of commitment is the 2015 Paris Climate Accord, an international agreement that 195 countries adopted to reduce greenhouse gas emissions and limit global warming to 2 degrees Celsius below pre-industrial temperatures.

In parallel, we're also seeing an exciting groundswell of energy at the city and state level. Since June 2017, 343 U.S cities, and thousands of companies and universities have committed to meet these Paris targets. Others are going even further by committing to go 100% renewable. Now, we need to make this momentum unstoppable.

Check out Act to find out what you can do.

RESOURCES TO LEARN MORE:

- **Drawdown.** Paul Hawken's Drawdown assumes the answers to climate action exist. His book and accompanying Drawdown Project outlines 100 successful efforts already in place around the world that can be imitated and amplified to make real, measurable change.

- **Global Covenant of Mayors for Climate and Energy.** A global network of cities and local governments committed to voluntary action to achieve climate goals and move toward a green, low emissions and resilient economy.

- **Climate of Hope.** A new book by Michael Bloomberg and Carl Pope that takes an optimistic look at climate solutions.

- **Growth in Clean Energy Sector.** A report by Environmental Defense Fund that looks at trends in wind, solar and the transition to clean energy in the US.

GREAT CONVERSATIONS: DEBRIEF TIPS

Helpful ideas to set-up your post-screening conversation

FOR ALL GROUPS:

- **Respect Time.** Have an agenda in mind for how much time you want to spend on discussion and how much on action, share your plan with the group and stick to it.
- **Be Energetic.** Your tone sets the tone for the group; if you are enthusiastic and positive the group will respond in kind.
- **Explore Together**. Don't feel like you need to know the answers to all questions. You gain credibility by saying, "I don't know," and asking the group or referring to the resources in this guide, on ChasingCoral.com, and the website skepticalscience.com for climate change questions.

FOR SMALL GROUPS:

- **Set The Space.** When the film is finished, invite people to shift their chairs or change seats so they are facing each other rather than the screen.
- **Get Everyone Talking.** Start the conversation by going around the room and asking everyone to respond to the film with one word or sentence. This sets your group up for more open discussion - people who have spoken once in a group are more likely to speak again.
- **Share the Air**. Pay attention to who is talking and make sure all voices are heard.

FOR LARGER GROUPS:

- **Write it Down**. Give everyone a minute to write down their thoughts and questions in response to the film. This gives people a moment to formulate their thoughts, and helps people remember their questions.
- **Talk to Your Neighbor**. For personal questions like, "How did you feel when you saw the before/after pictures of the reef?" have everyone turn to their neighbor and tell each other an answer so everyone gets a chance to speak.
- **Use Small Groups**. Try breaking into small groups, especially for brainstorming actions, and report back to the large group.

COMMON PITFALLS:

- **Move the conversation along**. If the group gets stuck on a controversy or misunderstanding, acknowledge the importance of the conversation and set a time to talk afterwards or the following day.
- **Watch for glazed eyes**. Conversation about *Chasing Coral* could easily get super political or super technical. Having a plan for your conversation and/or activities will help you get out of the weeds and back to a more accessible topic.

CHASING CORAL

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EXPOSURE LABS

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