CLIMATE CHANGE ACTIVIST TOOLKIT
INTRODUCTION

For over 30 years, the Surfrider Foundation has been working to protect our ocean, waves and beaches. Through our coastal preservation initiative, we focus on protecting shorelines by addressing threats like coastal development, shoreline armoring (i.e. seawalls), ‘beach fill’ projects, and advocating for stronger laws and policies to ensure coastal preservation. In recent years, we have seen climate change exacerbate many of the problems we are trying to solve.

Our coastal preservation efforts naturally lend themselves to working on climate change—yet it was Superstorm Sandy that provided a major wakeup call to increase our climate change work. Climate change uniquely impacts coastal resources, and there is no better organization than Surfrider to engage local communities to protect our ocean and coasts from climate change—we have one foot in the sea and the other on land—exactly where climate change is rearing its head.

Our Four-Pronged Strategy to Combat Climate Change

1. **Education and Outreach:** Widely educate our supporters, the general public, and decision makers about climate change impacts to our ocean and coast.

2. **Shoreline Planning:** Influence local, state, and national planning efforts to be more ‘proactive’ and incorporate climate change adaptation measures (i.e. managed retreat, increased setbacks, erosion control via restoration and “living shorelines”).

3. **Mitigation:** Engage in mitigation efforts such as planting Ocean Friendly Gardens, participating in dune/watershed restoration, and supporting the work of our strategic partners to decrease CO2 and greenhouse gases.

4. **Policy Advocacy:** Ensure decision makers: require adaptation planning; do not weaken environmental policies; reform insurance and subsidy programs to protect taxpayers; and improve emergency responses after ‘extreme weather events.’
Below is a shorthand version of climate change impacts. Surfrider Foundation HQ also created several resources that will help you further your knowledge about engaging on climate change issues, including:

- Climate change adaptation white paper
- Climate change talking points
- Climate change trifold brochure
- 10 Ways to Reduce Your Climate Change Footprint
- Responding to Extreme Weather Events Guidance
- Read current blogs on the climate change microsite.
- Use this PowerPoint to teach people about climate change and Surfrider’s efforts.
- **Beachapedia Resources**: Climate change page. Coastal adaptation page. Other climate change related categories page.
CLIMATE CHANGE IMPACTS OVERVIEW

Since the height of the industrial revolution, humans have been emitting pollution at unprecedented rates. Pollutants known as “greenhouse gases” (GHGs) are absorbed by the earth’s atmosphere and act like a “heating blanket.” The amount of GHGs in the earth’s atmosphere is directly linked to how much, and how fast, the earth warms—and thus, how much our climate changes.

Over the past several decades, the world has witnessed climate change impacts such as, record-setting temperatures, catastrophic hurricanes, melting ice sheets, flooding, drought, increased forest fires, and other extreme weather. Climate change is predicted to bring more intense storms and increased sea levels from melting ice sheets and warmer ocean temperatures (when water warms, H2O molecules expand—raising sea levels).¹ Your local beach could be impacted in several ways, including:

- **Shrinking Beaches**: Scientists predict that sea level could rise up to six-feet by 2100. An increase this large will swallow beaches—impacting public access, recreation, and healthy ecosystems. Beach erosion from increased storms will also chip away at our beaches. Unfortunately, seawalls are often installed to address erosion and protect unwise coastal development, but they often exacerbate the erosion problems and shrink beaches.²

- **Pollution**: More rain can result in sewage overflows and urban runoff cascading into the ocean. In addition, sea level rise and coastal inundation can overload and undermine wastewater infrastructure—causing malfunctions that result in more pollution.

- **Ocean Acidification**: Over one-quarter of CO2 emitted by burning fossil fuels is absorbed by ocean water.³ As a result, high concentrations CO2 are causing the oceans to acidify at rapid rates. Evidence from the Pacific Northwest suggests these drastic changes in ocean chemistry are detrimental to marine life like shellfish, coral reefs and crustaceans; and more acidic water (lower pH) is dissolving sea creatures’ protective shells. If climate change continues at its present rate, the pH level of the Earth’s oceans will decrease by 150 to 200 percent by 2100.⁴

- **Surfing**: Climate change and rising seas will contribute to extreme tides that will impact how waves break. In areas where the seafloor is sandy and flat (a beach break), the wave may break further inshore (perhaps not breaking at all until the shore break), thus changing the size and shape of the wave. In areas where the seafloor is uneven and rocky (a reef break), higher sea levels will inundate the reef, leaving less area for the wave to break and increasing the possibility that the wave might not break at all.⁵

- **Damaged Infrastructure**: Sea level rise and increased storm activity will damage community infrastructure (homes, roads, municipal buildings, etc.). As communities become more aware of the impacts of climate change on their beaches, they may choose to employ reactionary response measures such as coastal armoring and increased beach fill which create adverse impacts discussed below.

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¹ Environmental Protection Agency http://www3.epa.gov/climatechange/basics/facts.html
⁴ Oceans and Climate Change http://www.wmo.org/oceans-and-climate
Our coastlines are under siege from the impacts of climate change. Rising sea levels and more powerful storms are damaging community infrastructure, causing sewage overflows, shrinking our beaches and diminishing the public’s ability to enjoy these special places. Our ocean is absorbing pollution from fossil fuels, and in turn, causing “ocean acidification” that threatens marine life and entire ecosystems. While this graphic shows several impacts of climate change, it barely scratches the surface of the scale and complexity of this issue. In order to combat the looming threats of climate change, Surfrider is proactively working with local communities to “get ahead of the curve.”

LEARN MORE AT GO.SURFRIDER.ORG/CLIMATE-CHANGE
WHAT DOES A CLIMATE CHANGE ACTIVIST DO?

Outreach and Education

One of the most important, and easiest ways, to be a climate activist is to help Surfrider educate communities about growing climate change impacts such as: sea level rise, ocean acidification, and opportunities to be a part of the solution to build resilient communities.

Take the following educational ideas and strategies back to your local Surfrider chapter and create a plan! When you come up with new ideas please share them on ChapterNet in the Coastal Adaptation Forum and send to: ssekich@surfrider.org.

1. If you’re not already a member, join Surfrider today to help us keep our national, regional and local network functioning and fighting.

2. Work with your local Surfrider chapter to incorporate climate change discussions into your tabling events, chapter meeting and other outreach opportunities.

3. Display printed materials such as the coastal preservation brochure, the climate change brochure and the 10 Ways to Limit Your Carbon Footprint. Request materials from Surfrider HQ.

4. Communication through the Surfrider websites, blogs and social media to bring awareness about the climate change impacts to our coasts and raise awareness about specific “calls to action.”

5. Hold a fun educational event. Get creative. Connect the event to climate change and something fun. The San Diego Chapter recently held a cycling event where advocates biked along the coastline and then gathered afterward to talk about climate change. Sponsor a 5K run? Host a beach cleanup and spotlight climate change impacts on the coast?
6. Ride a Smartfin. Recently, Surfrider partnered with SmartFin to engage surfers to use new surfboard fin technology that collects oceanic data that advances our understanding of climate change on the ocean. Contact Stefanie for more information. ssekich@surfrider.org

7. Give presentations at local chapter meetings, community groups and schools. Use this PowerPoint as a template for your own presentation.

8. Lead “field trips” to shoreline areas where increased coastal erosion is an ongoing problem to demonstrate how sea level rise will continue to impact this community in the future. On the tour educate attendees about climate change impacts to our ocean and coast and adaptation measures.

9. Generate “earned media” through press release about local events, Op Eds., Letters to the Editor, etc. Visit Surfrider University.

10. Collaborate with HQ and local partners to generate TV coverage of climate change issues and adaptation. Visit Surfrider University and browse the Communications 101 course for ideas.

11. Emphasize the climate advocacy at Hands Across the Sand events.

12. Participate in King Tides events.

13. Host a movie/documentary screening to educate your chapter about climate change and coastal erosion issues and then hold an organized discussion afterward related to our work. A few good films include “Before the Flood”, “Sand Wars”, “Shored Up”, “The 11th Hour”, “The Island President” “The Inconvenient Truth” and “Chasing Ice”.

14. Attend climate change conferences and symposiums to increase your knowledge—and turn around and share that knowledge with others!

15. Expand work with diverse constituencies (i.e. business leaders, taxpayer groups, labor, Latinos, Tribes, insurance reform groups, climate justice, etc.) to expand our educational efforts and also learn from these organizations.

16. Work closely with chambers of commerce, academia and others to educate the public about the economic impacts of climate change.
Shoreline Planning

What is shoreline planning? It is simple. Shoreline planning (also called land-use planning, public planning, regional planning and urban planning) is how local municipalities create ordinances and land-use plans to manage development, protection of the environment, public infrastructure and other systems related to resource uses (water, agricultural, parkland, etc.).

In order to truly respond to pending climate change impacts, Surfrider Foundation needs to increase our involvement with shoreline planning processes at the state and local level. Being involved with planning processes provides opportunities to strengthen shoreline development policies and advance adaptation measures.

Adaptation Planning

The United Nations defines adaptation as actions taken to help communities and ecosystems cope with changing climate condition. Surfrider’s adaptation efforts concentrate on shoreline land use, sea level rise planning and dune/watershed restoration.

Typically, coastal adaptation planning is done through the planning department and/or commission (or perhaps done through public works or an environmental planning department). Adaptation planning often resides within sea level rise (SLR) planning documents. Some more advanced cities might have elaborate SLR plans and adaptation plans. In other instances, some cities might not have any SLR or adaptation plans. The city of San Francisco has a great sea level rise action plan.

First, determine what local municipality you will be working with. For example, if you live in San Francisco, California go the city’s website and look for their planning commission. Within that site, search for the words “climate change adaptation”, or “sea level rise.” If a SLR plan and/or adaptation plan exists, download it and review the document for Surfrider mission related concerns (see below for in-depth tips on what to look for).

Get on the city’s planning email list to keep track of agendas and be present when the city council or committees vote on climate issues. If a technical advisory committee exists, request to be a stakeholder. If you become part of a special committee, be sure you attend and assist with all stakeholder engagements.

If no planning documents exist, call the local planning commission and inquire about any climate change adaptation planning the city is doing. Also, find out when their next planning commission meeting is and attend. As with any public hearing, you can usually address the commission during “public comment.” During your testimony, ask the city if they have a “climate change adaptation plan” or “sea level rise plan.” If they do not have any adaptation planning, work with the local Surfrider chapter to write a comment letter and identify important local issues (see below for specific content you might want to include, and an example comment letter).

Another way to influence climate adaptation planning is to identify local and state agencies. For example, in California, the California Coastal Commission is one of the leading agencies driving...
climate change planning. Other agencies that work on sea level rise planning might include, State Lands Commission, harbors and ports, water quality control boards. Be sure to reach out to agency staff to inquiry about climate change adaptation planning efforts and what about the best way to get involved to ensure you are being the most impactful.

Planning Documents

When examining documents, ask yourself these questions:

1. Has a sea level rise vulnerability assessment been conducted identifying high-risk areas?
   a. Does it contain a future sea level rise projections?
   b. Is there a complete list of public infrastructure that will be impacted by a climate change such as wastewater treatment plants, roads, hospitals, airports, schools and municipal buildings?
   c. Is there an inventory of environmentally sensitive habitats/areas?
   d. Does the assessment contain analysis of cyclical coastal erosion, storm events, extreme tides, coastal flooding and their accumulative effects?

2. Is there a specific adaptation plan for resources/infrastructure in high-risk inundation zones (including residences, public buildings, sensitive habitats/resources)?

3. Is there an implementation plan for adaptation efforts? How will the adaptation plan be monitored?

4. Is the adaptation plan reflected in other planning documents (i.e. general plans, public works, etc.)?

The above questions are the basis of standard sea level rise planning. Below are specific areas Surfrider Foundation is hoping to see incorporated into adaptation planning. When writing a comment letter use this as a template. While this letter is addressed to a state agency, many of the recommendations apply to local planning.
Avoidance of Shoreline Armoring

Hard structures such as seawalls, jetties, rock revetments, etc. block the natural migration of sand by creating a narrow beach. To compound the situation, wave action undercuts the ocean floor, creating a steeper profile that further perpetuates erosion.

Professor Gary Griggs of U.C. Santa Cruz summarizes how coastal armoring causes beach loss: “Whenever a hard structure is built along an eroding coastline, the shoreline will eventually migrate landward. The effect will be **loss of the beach in front of the seawall or revetment** as the water deepens and the shore face profile migrates landward.”

If the sea level rise plan contains armoring plans, be sure to advocate for soft alternatives and mitigation plans for impacts to beaches.

![Initial Shore Profile vs. Beach Loss Profile](image)

Beach loss eventually occurs in front of a seawall where there is chronic erosion.

Source: U.S. Army Corps of Engineers (1991)

Support Non-Structural Alternatives

Advocate for alternatives to coastal armoring such as watershed and dune restoration.

*Restoration projects can help fortify natural systems against raising seas.*

In addition, advocate for “Living Shorelines.” Living shorelines encompasses a range of shoreline stabilization techniques that are primarily made of vegetation or other living, natural ‘soft’ elements. Living shorelines maintain continuity between the land-water interface and reduce erosion while providing habitats and enhancing coastal resilience.
Setbacks

Surfrider believes local municipalities should require setbacks for any new development or ‘redevelopment.’ Setbacks create a certain distance from the ocean leaving open space to support natural functions and accommodate raising seas.

Governments should increase mandatory setbacks by establishing buffers based upon projected calculations of increased flooding, erosion rates, and projected sea level rise.

Rebuilding Restrictions

Surfrider supports local governments’ limiting a property owner’s ability to rebuild structures destroyed by natural hazards, such as flooding, coastal erosion, etc. Governments can limit when and how structures are rebuilt by prohibiting reconstruction, and possibly requiring the landowner not conduct armoring in the future.

“Resilient” Relocation

“Resilient relocation” also known as “managed retreat” moves structures out of harm’s way. Over time, managed retreat will create a barrier between eroding beaches and raising sea levels while keeping important infrastructure (homes, utilities, roads, airports, wastewater plants, etc.) safe from rising sea levels. In places where relocation is not feasible, advocate for “retrofitting” (i.e. raising and elevating structures) and other natural based erosion control.

Managed retreat has proven to be more economically beneficial than armoring. For example, the city of Imperial Beach in California conducted a long-term assessment of sea level rise and looked at using managed retreat over continual armoring. The study concluded that by 2100 the city will spend nearly five times as much on continued maintenance and new armoring compared to managed retreat.

Proactive Planning Matters! U.N. Secretary General Ban Ki-moon reminds us that every $1 spent on reducing the risks from disasters now will save around $7 of damages later.  

7 Act now or pay later: protecting a billion people in climate-threatened coastal cities http://www.preventionweb.net/publications/view/48858
**Beach Access**

Sea Level Rise (SLR) will undoubtedly impact beach access therefore it is imperative local SLR plans prioritize public access. The use of easements is particularly important for protecting public access and critical coastal habitats. Easements are simply legal mechanisms that “authorize use of land”, ultimately ensuring public access.

Secondly, advocate for rolling easements. Rolling easements move if/when beach conditions change. Rolling easements are defined relative to the location of the shoreline and move landward with the natural action of erosion, storm events and sea level rise. **Finally, advocate that SLR plans analyze land acquisition for public use.**

![Beach Access Image](https://via.placeholder.com/150)

**PHOTO: norfolkdistrict via Visualhunt / CC BY**

**Beach ‘Replenishment’**

When watershed/dune restoration, and landward retreat is not feasible, beach replenishment (aka beach fill) projects may be considered, on a case-by-case basis. When reviewing a SLR planning document, make sure a standardized approach is used to minimize impacts nearshore environments and recreation.

**Beach fill projects can create several potential ecosystem impacts including:** burying existing habitat, changing the sand composition of the beach and clouding nearshore waters as the beach fill settles, to name a few. Some beach fill projects have been linked to increased ocean-user injuries when sand placement causes sharp drop offs; allowing larger waves to crash directly on the shore rather than being broken up by nearshore sand bars.

Over the last several decades, beach fill has developed into an increasingly popular engineering method to deal with coastal erosion. However, beach fill projects only temporarily restore the beach and are also very expensive (often paid for by taxpayers). Once started, beach fill projects must be regularly maintained in perpetuity. Beach fill projects are **not** a long-term solution for coastal erosion problems.
Support Mitigation Efforts

Surfrider is proudly working with strategic partners to advocate for greenhouse gas emission reduction. Below are a few examples of how Surfrider chapters can work on mitigation efforts.

1. Support carefully crafted legislation that focuses on both emissions reduction and adaptation planning (please note, all legislation support must be approved and coordinated by Surfrider HQ).

2. Support Community Choice Energy (CCE). The goal of CCE is to reduce emissions, and increase renewable energy, by allowing local communities to choose renewal energy sources over fossil fuels. CCE is a growing trend that Surfrider chapters should keep an eye out for and engage by going to City Council meetings to support CCE plans.

3. Promote and attend climate change rallies.

4. Comment on local climate action plans that aim to reduce emissions.

5. Encourage people to decrease their carbon footprint by: driving less, using mass transit, biking to destinations, lessening energy consumption at home, not purchasing plastics, eating locally grown food, and consuming less meat.

Another important mitigation approach is “carbon sequestration” via our Ocean Friendly Gardens program. Ocean Friendly Gardens allow for mitigation by trapping greenhouse gases.

Watch this 4-minute video to see how soils trap greenhouse gases. It’s mind-blowing.
Policy Advocacy

As our country experiences more extreme weather events, the typical response is to throw public money at the problem and rebuild in the same place. This approach cannot continue, not only is it unsustainable, it is unfair to taxpayers.

In order to curtail these problems, Surfrider must advocate for improved emergency responses policies. After extreme weather events, use this document as talking points to advocate for adaptation measures with local municipalities. Recovery efforts following extreme weather events provide an opportunity to improve response policies and influence local, state, and national planning efforts to be more ‘proactive’ and incorporate adaptation efforts.

If you live in a state where insurance programs provide funds to ‘rebuild’ in at-risk areas, work with Surfrider staff to advocate for reform. A great example of advocating for insurance reform came in Florida where Surfrider helped pass legislation that ended subsidized insurance for new construction and substantial improvements in high-risk and sensitive areas.

In addition, Surfrider is also advocating to reform the National Flood Insurance Program (NFIP). NFIP is not a well-known federal program, but it is extremely important and has significant implications for the environment and taxpayers. NFIP reforms Surfrider would like to see include: limiting subsidies to rebuild in ‘harm’s way,’ ensuring accurate flood maps to reflect vulnerable areas prone to extreme weather events and sea level rise, and better assisting low-income property owners. At the end of the day, subsidized insurance is costly and very shortsighted in light of looming SLR threats.

Subsidies to the fossil fuel industry is another federal practice that Surfrider would like to see reformed. A study conducted by the Environmental Law Institute estimated that between 2002-2008, the fossil fuel industry received $72 billion while the renewable energy industry only received $29 billion. That’s roughly $10 billion a year that could be spent on climate change adaptation, renewable energy, climate research, etc.

Since President Trump took office, we have witnessed many attempts to rollback climate change policies and regulations. The Surfrider Foundation is alarmed to see the Trump Administration reverse years of progress by the federal government to address the critical threat of climate change. Our nation’s coasts and adjacent communities are already experiencing enormous impacts from a changing climate through sea level rise, increased storm activity, and an acidifying ocean—now is not the time to back away.

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Surfrider calls upon all elected officials in the U.S. to hold the administration accountable for taking meaningful action on climate—both through federal policies and displaying international leadership.

**Ways Surfrider Activists Can Influence the Trump Administration:**

- Call your federal representatives and ask them to defend our nation’s climate change policies including critical funding for the EPA and NOAA. Find your member’s phone numbers here: [Senate](#) and [House](#).

- Send an email to Congress asking them to reject the President’s proposal and support funding for the EPA and NOAA.

- Send President Trump a [letter](#) urging him to honor the Paris Climate Agreement. The international agreement to address greenhouse gas emissions was negotiated under a United Nations Framework and has been signed by nearly two hundred nations. Even [Exxon Mobile has urged the Trump administration](#) to participate,

- Advocate to keep [Obama’s Climate Action Plan](#) intact, which provides a roadmap for the U.S. to transition to renewable sources of energy while adapting to impacts already taking place. Of particular interest for Surfrider members, the plan includes actions to promote coastal resilience through support for community planning and investments in land and water conservation.

- Attend congressional town hall meetings held in your local districts and use the public comment period to stress the importance of climate change action.

- Participate in demonstrations like the People’s Climate March. For more info [click here](#).
Conclusion

While climate change impacts to our coast and ocean are daunting, local communities do have the power to be proactive and urge decision makers to tackle climate change.

To ensure your efforts are impactful, reach out to regional and HQ Staff when working on Surfrider’s four-prong approach for climate change action. And remember, as Surfrider activists, we are in a unique position to carry out distinct work that only a few nonprofits are focusing upon.

Thank you for your continued work to protect our ocean, beaches and waves in light of climate change.

Appendix

1. Climate change adaptation white paper
2. Climate change talking points
3. Climate change trifold brochure
4. 10 Ways to Reduce Your Climate Change Footprint
5. Responding to Extreme Weather Events Guidance
6. Read current blogs on the climate change microsite.
7. Use this PowerPoint to teach people about climate change and Surfrider’s efforts.

This document was prepared by the Surfrider Foundation to help chapter activists and local communities effectively work on climate change impacts that affect our coasts and ocean.
THANK YOU FOR YOUR CONTINUED SUPPORT.

SURFRIDER.ORG