



GrayIsGreen

Who are we?

Gray Is Green is an online gathering of older adult Americans aspiring to create a green legacy for the future. As environmentally conscious elders, we respond to a generational call: to co-create a future of economic justice, ecological sustainability and social justice.

We hold next generations of humans in mind and consider the future of ecosystems and other species. We are alert to the historic challenges facing our planet. And we are aware of the question arising from descendants generations hence:

What did you do, when you knew?

What do we do?

We aspire to embrace our eldership, living beyond consumerism and ageism. **Our Curriculum for Gray-Green Living** offers a variety of ways to join—and re-engage with—this elder movement.

We offer a periodic newsletter, a speaker's bureau, online resources, a [Facebook page](#) for relevant updates. In partnership with congenial organizations, we serve as a central clearinghouse of ideas and communications for older adults interested in greening their lives, learning about sustainability, advocating for sound public policy, being creative stewards or grandparents, emerging as elders, and mentoring young people.

*We invite **you** to get involved!*

www.grayisgreen.org

Community Resilience Coastal Flood Risk

Coastal areas are one of the most desirable places to live and visit. In fact, about 39% of the United States' population lives in counties along our coastlines¹, and population density is projected to continue increasing in the near future. However, while coastal areas have always been at risk of flooding, the risk increases with global warming effects².

Factors such as more severe storms, shoreline changes, and sea level rise—individually and in combination—make coastal flooding more likely. Increased flood risks include floods in places not previously prone to flooding, as well as more severe flooding in already flood prone areas.

Impact of More Severe Storms

Stronger storms occur as global warming increases the size and intensity of storms and hurricanes bringing more rainfall and wind. Strong winds can push waters against the coast in a storm surge³ reaching further inland than normal tidal flooding. During Hurricane Katrina in 2005⁴ the storm surge along the Mississippi coast was reported as high as 28 feet, closely resembling a tsunami.

Impact of Shoreline Changes

Shoreline changes initiated by natural processes and by human development can increase the risk of flooding. Coastal areas are naturally dynamic: wetlands,

beaches and dunes change and move as a result of wave and wind action. Human development has removed or greatly reduced many protective coastal features, such as wetlands and dunes. Dunes provide a buffer to wave energy and wetlands provide an area to absorb excess water. Filling in wetlands and covering them with impervious surfaces⁵ without providing alternative drainage areas for rain and high tide waters, creates flooding.

Impact of Sea Level Rise

Sea level rise increases flood risk as normal high tides rise higher and higher. Global warming increases water temperatures, and warmer water expands. In addition, global warming is melting glaciers and polar ice, adding to the ocean's volume. While sea level rise in the twentieth century averaged about eight inches, it is projected to rise faster in the next 100 years, with projections up to 6.6 feet higher⁶.

Higher sea level also puts more areas at risk during storms. Shoreline features that might have protected coastal communities in the past will be less effective or drowned. Higher sea levels with more severe storms and compromised shorelines means that places that never flooded before will see damage.

People & Infrastructure in Harm's Way

Close to five million people in the United States already live within

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four feet of high tide levels, and will experience even higher flooding risk if high tides increase as they are projected to⁷ Sea level rise projections for the next century range up to six and half feet, making flooding a serious concern for coastal communities.

Coastal communities will see low elevation roads and properties flooding many times a year⁸ when previously they flooded only infrequently during the most severe storms. Many communities along the east coast are starting to see this happen. Rising waters are both expensive and dangerous to people in these areas. A car can easily be swept away by just two feet of water⁹.

In addition to roads, homes, and businesses, infrastructure serving the entire community is also at risk from flooding. Police and fire stations built in low lying areas cannot operate if they are flooded, and must be relocated. Water and sewer systems are especially vulnerable to rising waters, and are expensive to retrofit or rebuild further inland.

Managing Coasts into the Future

Our coastal areas are at a higher risk of flooding¹⁰ than ever before. Global warming coupled with dense populations makes it critical that communities plan for higher water and dangerous storms. Legislative changes to the federal Coastal Zone Management Act stipulate taking sea-level rise into account for planning. In addition, the Federal Emergency Management Agency (FEMA) is updating flood insurance maps to reflect greater areas of flood risk.

On the Local Level

Responses of coastal communities to sea level rise and flooding vary. It requires political courage to acknowledge that some neighborhoods will soon be underwater, and it will be prohibitively expensive or even impossible to prevent the flooding. Minority and low-income communities with less influence may be more likely to suffer than more affluent neighborhoods. This is a concern taken up by the climate justice movement¹¹.

Many communities are taking measures to adapt¹² by mapping the local flood risks, and mandating that buildings be elevated and built to withstand flooding. Roads, bridges and utilities are being identified for rebuilding to new standards in order to withstand rising water. In some places where flooding has repeatedly occurred, homes and buildings are being removed.

Conservation areas protected from human development along the coast will be at risk of changes due to flooding, and in some cases will disappear underwater. It is uncertain how these places and the species that depend on them will fare in the future, and whether alternative conservation areas can be established to meet the needs of plant and animal communities as their ecosystems change.

Coastal communities which plan for higher sea levels and increased flooding will adapt with fewer crises. It is important to acknowledge the fact that preventive measures will generally be more cost effective¹³ than disaster response.

1 <http://stateofthecoast.noaa.gov/features/coastal-population-report.pdf>

2 <http://www.epa.gov/climatechange/impacts-adaptation/coasts.html#adapt>

3 <http://www.nhc.noaa.gov/surge/>

4 <http://www.nhc.noaa.gov/outreach/history/#katrina>

5 see Resource Sheet Impervious Surface Section

6 <http://toolkit.climate.gov/topics/coastal-flood-risk>

7 <http://toolkit.climate.gov/topics/coastal-flood-risk>

8 https://www.youtube.com/watch?feature=player_embedded&v=G-fZnIR_IJ0

9 https://www.floodsmart.gov/floodsmart/pages/flood_facts.jsp

10 <http://toolkit.climate.gov/topics/coastal-flood-risk>

11 see Climate Justice sub-topic

12 <http://www.epa.gov/climatechange/impacts-adaptation/coasts-adaptation.html>

13 <http://www.homelandsecuritynewswire.com/dr20140205-protecting-cities-from-floods-cheaper-than-postflood-damage-repairs>

