



# Climate Resilience and Related Resources

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Source: <https://www.kuow.org/stories/after-another-harsh-winter-whatcom-county-continues-flood-repair>



# Nooksack River Flood November 2021

*Image: KUOW*

*Source: Gillett et al. 2022*

An aerial photograph showing a vast agricultural landscape that has been significantly flooded. A large, winding river or canal system cuts through the center of the image, with water overflowing into surrounding fields. The water is a murky, brownish-grey color, contrasting with the green and brown of the dry land. The sun is low in the sky, creating long shadows and a golden glow over the scene. The background shows a hazy horizon with distant hills and a blue sky with scattered clouds.

# 2-4x More Likely Due to Climate Change

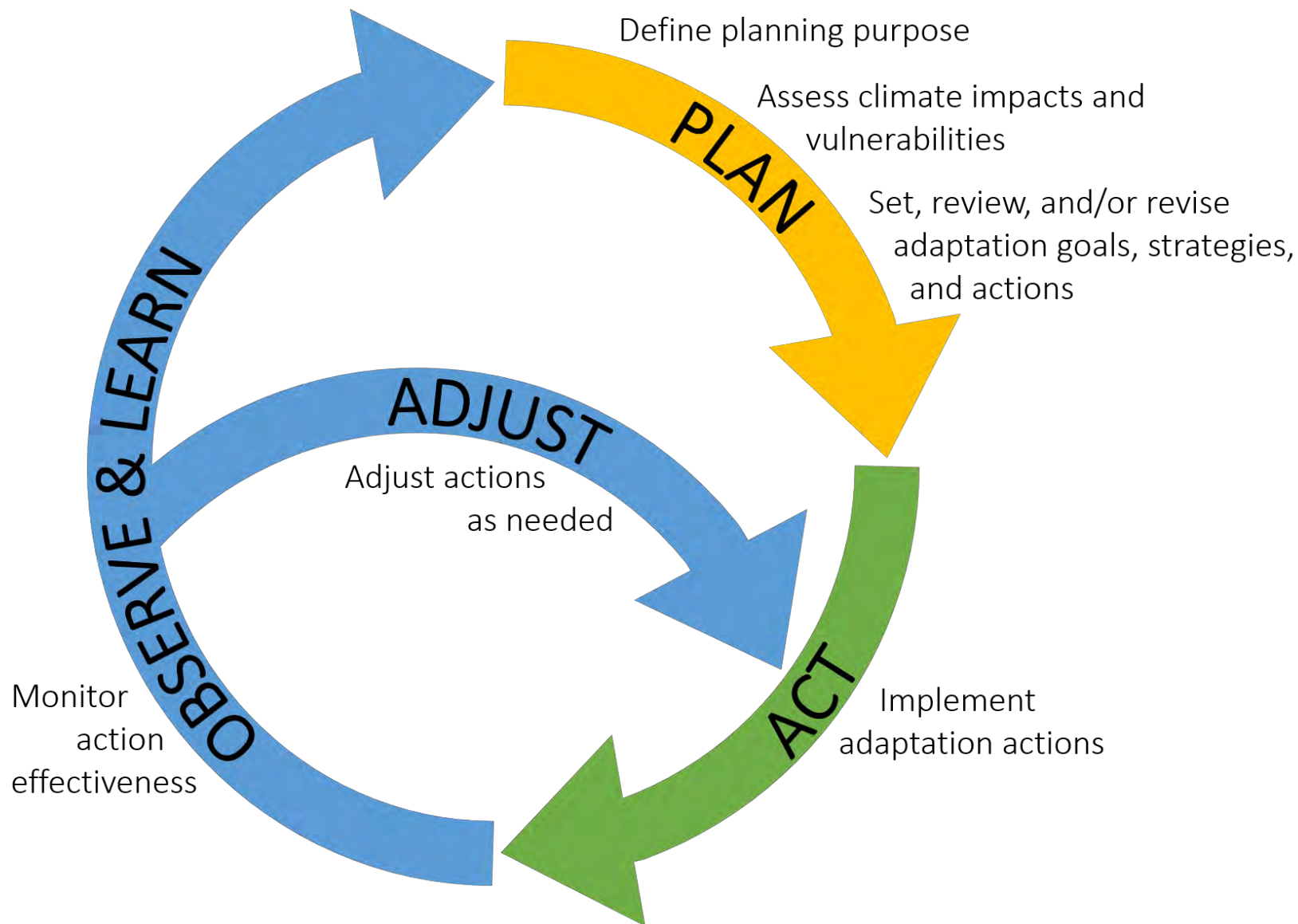
*Image: KUOW*

*Source: Gillett et al. 2022*

# Resilience

The ability to prepare for, recover from, and adapt to impacts

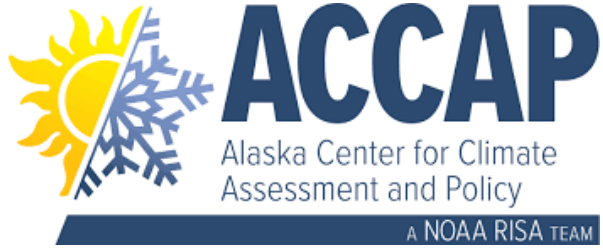
# Climate Change Adaptation Cycle





# Resources

**AK:**



**NORTHWEST**  
Climate Adaptation  
Science Center

**USGS**

**BC:**



**Climate Adaptation  
Partnerships**  
*Formerly RISA*

**NOAA**

**WA:**



**USDA**

**OR:**





# Local and State Efforts





# Resources *(not comprehensive!)*

## Guidance:

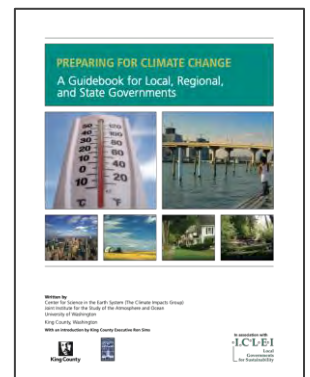
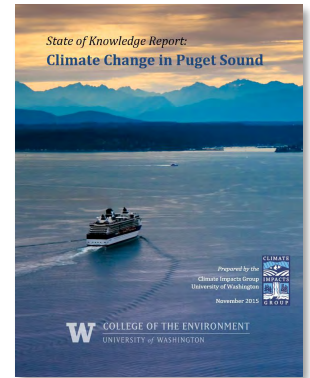
- US Climate Resilience Toolkit: <https://toolkit.climate.gov/>
- Preparing for Climate Change: <https://doi.org/10.6069/42ojf422>

## Reports and Case studies:

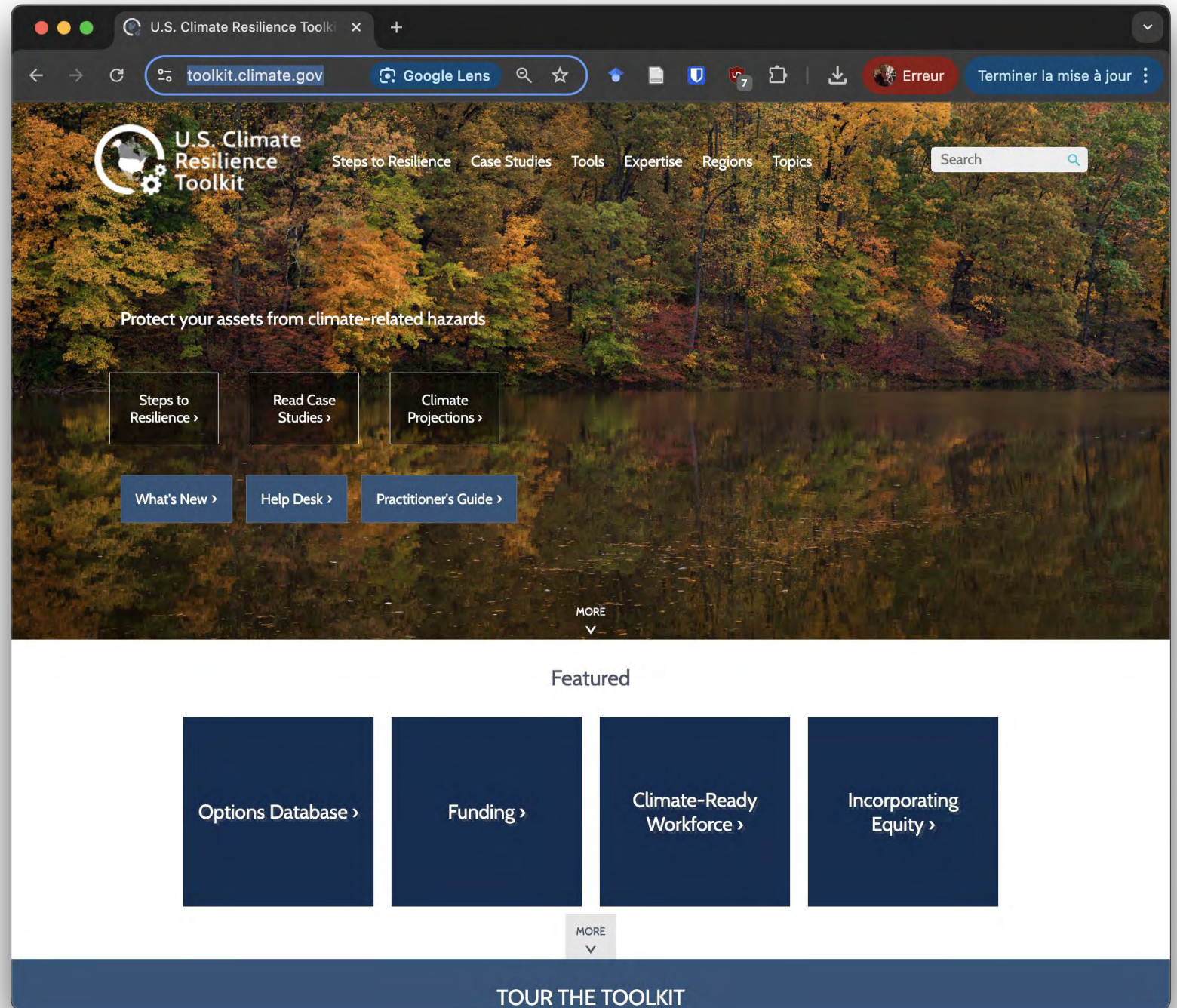
- Puget Sound State of Knowledge Report: <https://cig.uw.edu/resources/special-reports/ps-sok>
- Climate Adaptation Knowledge Exchange (CAKE): <https://www.cakex.org/>
- Adaptation Clearinghouse: <https://www.adaptationclearinghouse.org/>

## Example Tools:

- Climate Mapping for a Resilient Washington: <https://cig.uw.edu/resources/analysis-tools/climate-mapping-for-a-resilient-washington/>
- Climate Toolbox: <https://climatetoolbox.org/>
- Water Resources Dashboard: <https://toolkit.climate.gov/topics/water/water-resources-dashboard>
- Climate Impacts Group: <https://cig.uw.edu/resources/analysis-tools/>
- NOAA, Sea Level Rise: <https://sealevel.globalchange.gov/>



# US Climate Resilience Toolkit



<https://toolkit.climate.gov/>

# US Climate Resilience Toolkit

<https://toolkit.climate.gov/>

The screenshot displays a web browser window with the URL  `toolkit.climate.gov/steps-to-resilience/st...`. The page header features the U.S. Climate Resilience Toolkit logo and navigation links for Steps to Resilience, Case Studies, Tools, Expertise, Regions, and Topics. A search bar is also present.

The main content area is titled "Steps to Resilience Overview" and includes a description: "The Steps to Resilience framework encompasses the team building, data gathering, and decision making it takes for a local climate champion and a team of engaged community members to enhance their resilience to climate-related impacts. The framework is aligned with, and inclusive of, other efforts to reduce risk through adaptation."

On the left side, there are social media sharing options for Facebook (SHARE), Twitter (TWEET), and Print (PRINT).

On the right side, a vertical menu lists the steps of the framework: Get Started, Understand Exposure, Assess Vulnerability & Risk, Investigate Options, Prioritize & Plan, and Take Action.

Below the text is a video player with a teal background and the text "Steps to Resilience". The video player shows a progress bar at 01:42 and various control icons.

Below the video player, the text reads: "Steps to Resilience Overview" and "What is the Steps to Resilience framework?".

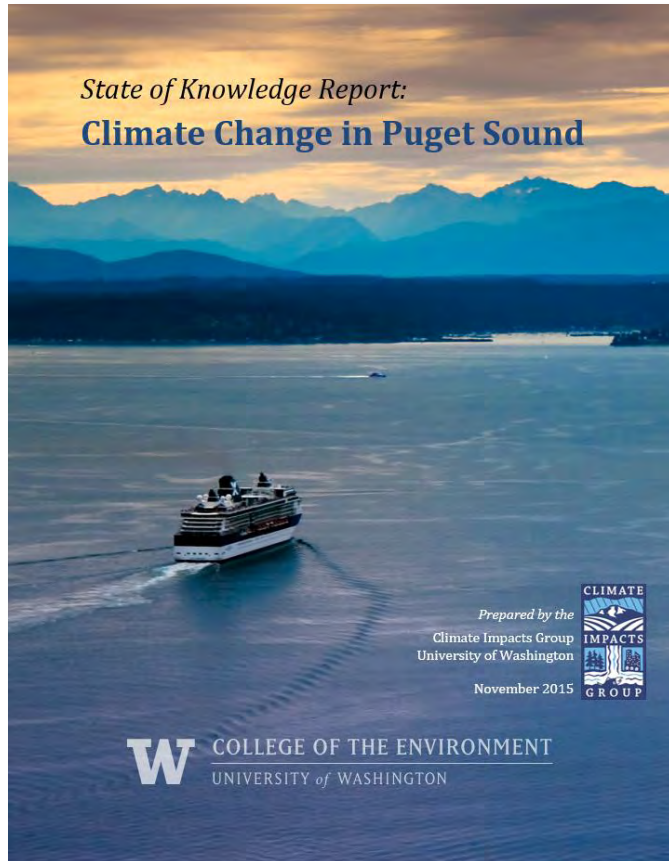
The bottom of the page contains the text: "The framework describes a process to help communities learn about their local climate hazards, identify their most pressing climate-related issues, and work together to develop an equitable

# US Climate Resilience Toolkit

<https://toolkit.climate.gov/>

The screenshot shows the 'Case Studies' page of the U.S. Climate Resilience Toolkit. The browser address bar shows 'toolkit.climate.gov/case-studies'. The page header includes the toolkit logo and navigation links: 'Steps to Resilience', 'Case Studies', 'Tools', 'Expertise', 'Regions', and 'Topics'. A search bar is located on the right. Below the header, there are filter options: 'Filter by has completed plan:', 'Filter by topics and sectors:', 'Filter by hazards:', 'Filter by assets:', and 'Filter by steps to resilience:'. On the left, there are social media sharing options for Facebook (SHARE), Twitter (TWEET), and Print (PRINT). The main content area features a map of the United States with numerous blue location pins. Below the map, there are four featured case study cards with images and titles: 'A Climate for Resilience' (Houston), 'A Community Effort Stems Runoff to Safeguard Corals in Puerto Rico', 'A Community Works Together to Reduce Damages from Flooding', and 'A Coral Bleaching Story With an Unknown Ending'.

# Puget Sound State of Knowledge (2014)



*Section 7: Water Quality*

## SECTION 7

### How is Puget Sound's Water Quality Changing?

Puget Sound is projected to experience a continued increase in sea surface temperatures, and continued declines in pH and dissolved oxygen concentrations. These changes, which could affect marine ecosystems and the shellfish industry, will be affected by variations in coastal upwelling and circulation within Puget Sound. While it is currently not known how climate change will affect circulation and upwelling in the region, these processes will continue to fluctuate in response to natural climate variability. Impacts on marine ecosystems and shellfish farming generally point to increasing stress for fish and shellfish populations. Efforts to address Puget Sound's water quality are increasing, particularly in the areas of ocean acidification monitoring and implementation of risk reduction practices in the shellfish industry.

### *Climate Drivers of Change*

**DRIVERS** *Wind patterns, natural climate variability, and projected changes in temperature and precipitation can all affect water quality in Puget Sound.<sup>A</sup>*

- *Observations show a clear warming trend, and all scenarios project continued warming during this century. Most scenarios project that this warming will be outside of the range of historical variations by mid-century (see Section 2).<sup>1,2</sup>*
- *Warming.* The salinity of Puget Sound's waters is tightly linked to freshwater inflows

<https://cig.uw.edu/resources/special-reports/>



# Bottom line:

- There are many good ways to get started – no rigid formula
- It's always better to start simple
- Understanding the science is helpful, but rarely the right starting point
- Adaptive management applies to climate resilience too!
- Equity/Engagement: Who else should be part of the conversation?



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*Image Credit: Kendra Kaiser, Boise State University*