



KITSAP COUNTY

Climate Change Resiliency Assessment

JUNE 2020 | EXECUTIVE SUMMARY



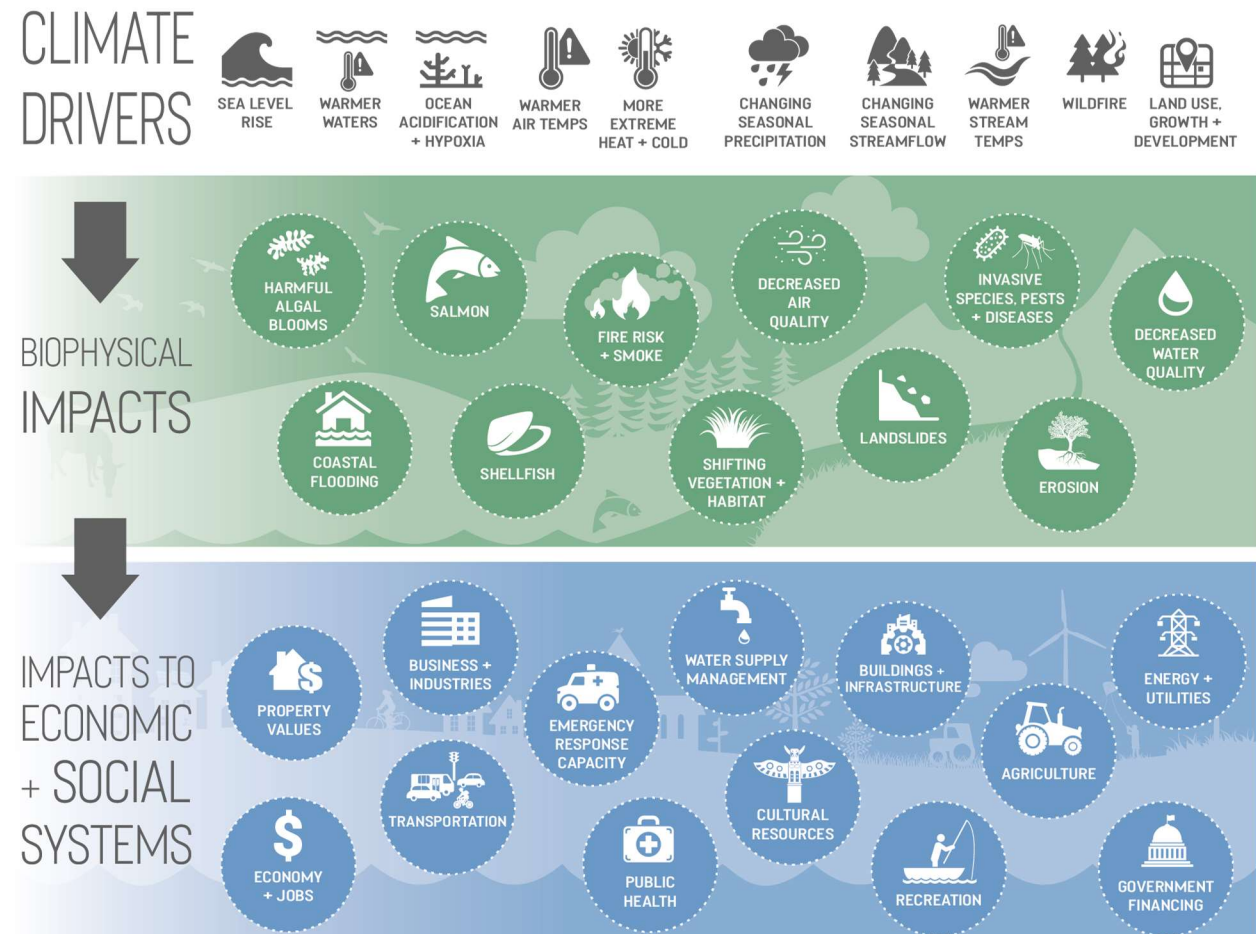
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Kitsap County Climate Change Resiliency Assessment Executive Summary

Climate change has already affected and will continue to affect the infrastructure, natural systems, economy, culture, and livelihoods of people who live and work in Kitsap County. The Pacific Northwest, Puget Sound region, and Kitsap County have experienced measurable and observable climate change trends and impacts. Warmer air temperatures, warmer water temperatures, sea level rise, ocean acidification, increasing frequency and intensity of extreme weather events, changing seasonal precipitation and streamflow patterns, and increasing drought conditions and changing wildfire risk are all expected under future climate scenarios. Additionally, climate change will affect future land use decisions, population growth, and development, which in turn will shape how localized climate impacts are felt and realized.

Figure 1. Relationship between Changes in Climate, Associated Biophysical Impacts, and Impacts to Economic and Social Systems



About the Climate Change Resiliency Assessment

Kitsap County, the City of Bremerton, and the City of Port Orchard commissioned Cascadia Consulting Group, with Greene Economics and Herrera Environmental, to prepare this **Climate Change Resiliency Assessment** to review and summarize climate change drivers, impacts, and risks for Kitsap County. The assessment begins with an overview of climate drivers, biophysical climate impacts, and future climate projections (**Chapter 2. Climate Change Overview**).

The Climate Change Resiliency Assessment then presents syntheses of current and future climate impacts to the following **social and economic systems**:

Impacts to Social and Economic Systems	
Public health and healthcare services	Chapter 3. Public Health
Property values, businesses, energy supply and utilities, and future economic damages	Chapter 4. Economy
Historical and archaeological sites, recreational opportunities, and Tribal cultural resources	Chapter 5. Cultural Resources
Public infrastructure and support systems	Chapter 6. Public Infrastructure
Land use and development	Chapter 7. Land Use and Development
Agricultural crops, livestock, and livelihoods	Chapter 8. Agriculture
Insurance, municipal bonds, and County tax revenue	Chapter 9. Local Government Finance

Following the discussion of impacts to social and economic systems, the assessment then summarizes the **biophysical impacts** of climate change in the following areas:

Biophysical Impacts	
Landslide risk, bluff erosion, sediment transport, and storm surges and coastal flooding risk	Chapter 10. Geologic & Natural Hazards
Hydrologic patterns, stream and riverine flooding, regional hydropower production, and irrigated agriculture	Chapter 11. Hydrology and Hydrogeology
Terrestrial, freshwater, and marine and coastal habitats and the species that depend on them	Chapter 12. Habitat
Wildland-urban interface, wildfire risk, and emergency response capacity	Chapter 13. Fire



Key Findings

Key findings, explored in more detailed in the chapters by topic area, include the following:



Public health

More intense heat waves are likely to increase heat-related and respiratory illnesses and deaths. Food insecurity and mental health problems could increase for people with natural resource-related occupations, such as fishing, forestry, agriculture, recreation, service industries, and construction. Outdoor laborers, elderly people, and youth have a higher risk of a range of climate-related health issues.



Economic impacts

Values of property in low-lying or coastal areas may be adversely affected from future flooding and sea level rise. A wide variety of industries may be affected in the future, including construction and development, manufacturing, food and hospitality services, and natural resource economies. There is a broad range of future economic damages from climate change, most notably lost labor hours.



Culture and recreation

Historical sites and buildings, parks, waterfronts, and archaeological sites are likely to be damaged from future flooding, extreme heat, and shifting precipitation patterns. Flooding, habitat shifts, and impacts to certain species such as salmon will have detrimental cultural and health impacts for Tribes.



Coastal flooding and infrastructure

Coastal flooding impacts from a combination of sea level rise, storm surges, and heavy precipitation events can result in substantial physical, ecological, and infrastructure damage. This includes flooding of transportation routes, damage to waterfronts, inundation and saltwater intrusion of wastewater infrastructure, and overload of stormwater infrastructure.



Land use and local climate impacts

Future urbanization and the increased use of impervious pavements are likely to increase the probability and severity of climate impacts such as urban flood events. Land use and vegetation cover may also shift with warmer temperatures and changing precipitation patterns, which may have secondary effects on natural flood control, urban heat island effect, and wildfire risk.



Geologic and natural hazards

Landslide risk will likely increase due to heavier rain events, soil erosion and destabilization, and sediment transport patterns. Bluff erosion rates may accelerate from winter storms, storm surges, sea level rise, and heavy rain events. Increased rates of bluff erosion will have long-term implications for properties, roads, and habitat on coastal bluffs.



Habitat and fire

Future climate change will likely alter terrestrial, freshwater, marine, and coastal habitats. These habitat changes will have a wide range of impacts to sensitive species and ecological processes. The prevalence of invasive species and diseases is likely to increase. Though wildfire risk remains low for Kitsap County under future climate conditions, the expansion of the wildland-urban interface may increase the likelihood of wildfire spread across a landscape.