



# Glossary

## Coastal Processes...

...Natural forces that shape and sustain the shoreline.

### BEACH EROSION

The removal of beach sand by coastal processes such as wave action, tides and currents, exacerbated by sea level rise.

### BLUFF EROSION

The gradual wearing away of coastal cliffs from wave impact, wind, and rainfall, causing the bluff edge to retreat over time.

### COASTAL FLOODING

When ocean water temporarily covers normally dry land during high tides, storm surges, or heavy rainfall.

### COASTAL PROCESSES

The ongoing interactions between waves, wind, and geology that shape the coast and move sand and sediment along the shore.

### EL NIÑO EVENT

A periodic warming of Pacific Ocean waters that temporarily raises sea level and increases storm activity along the California coast.

### EROSION

The wearing away and movement of soil, rock, or sand by wind, rain, and water flow.

### INUNDATION

The submergence of land by water, particularly in a coastal setting, often from tides, storm surges, or heavy rain.

### MEAN HIGH TIDE

The average point where high tides meet the shoreline over an 18.6-year period. This line marks the boundary between state-owned lands (below) and private upland property (above), though its position is dynamic and often shifts.

### SAND TRANSPORT

The movement of sand or sediment along the coast by waves, currents, and wind, and gravity constantly reshaping beaches and dunes.

### SCOUR

Localized erosion around a structure, such as a pier or seawall, caused by fast-moving water.

### SEA LEVEL RISE

An increase in the level of the world's oceans due to the effects of global warming.

### STORM SURGE

A temporary rise in sea level caused by storm winds pushing ocean water toward the shore, over and above the predicted astronomical tides.

### VERTICAL LAND MOTION

Up or down movements of land at a coastline, such as sinking caused by the compaction of sediments, or the rise and fall of land masses driven by tectonic plates.

### WAVE ACTION

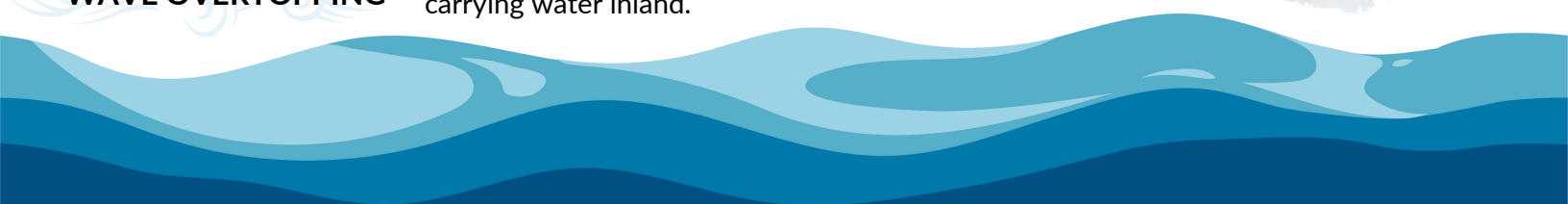
The movement and energy of ocean waves that shape the shoreline, heavily influencing the ecology of intertidal zones.

### WAVE ATTENUATION

The reduction of wave energy as it moves through landscape features such as reefs, marshes, or dunes.

### WAVE OVERTOPPING

When waves break over landscape features like sea walls, dunes, bluffs or cliffs, carrying water inland.





# Glossary

## Adaptation Strategies... Flexible plans to respond to changing conditions

### ADAPTATION PATHWAYS

A flexible planning approach that identifies different options for adapting to our changing climate over time, and shifting strategies as conditions change through the use of triggers and thresholds.

### ADAPTIVE CAPACITY

The ability of a community, ecosystem, or system to adjust to climate impacts and recover from potential damages through climate variability and other disturbances.

### ADAPTIVE MANAGEMENT

The iterative learning process producing an improved understanding of management practices over time.

### ARTIFICIAL REEFS

Human-made reefs built to support marine life. By adding hard surfaces where kelp and coral can grow, they mimic natural reefs and help rebuild underwater ecosystems.

### BEACH NOURISHMENT

Adding sand to an eroding beach to restore its width and protect the shoreline, usually pumped via dredge or delivered by truck.

### CLIMATE CHANGE

A change in global climate patterns apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

### CRITICAL INFRASTRUCTURE

The key physical and digital systems, services, and networks essential to the City of Santa Cruz that must remain operational during & after coastal hazards to protect our community's public health and safety.

### EXPOSURE

The number and dollar value of assets considered to be at risk during the occurrence of a specific hazard.

### EMERGENT GROUNDWATER

The condition that occurs when the groundwater table rises above the surface of the ground and creates surface flooding.

### EXTREME WEATHER EVENT

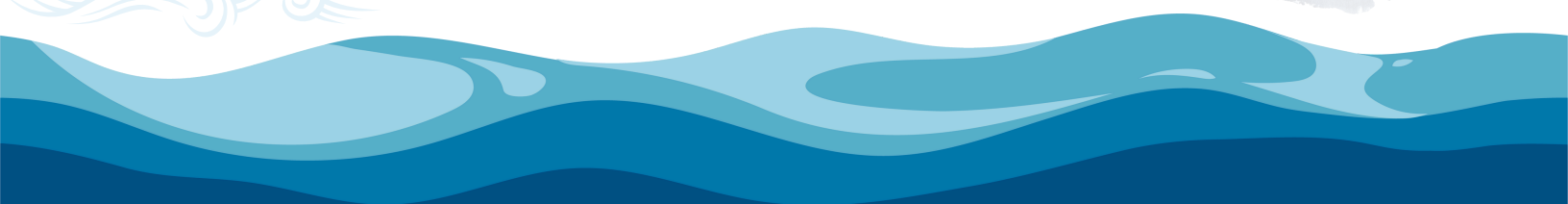
Unusual or severe weather, such as intense rainfall, drought, or heat waves, that can affect coastal systems.

### GROUNDWATER RISE

When groundwater is pushed up through the soil because of tidal action, storm surge, and/or high amounts of precipitation. Groundwater rise can cause flooding and saltwater intrusion.

### HABITAT ENHANCEMENT

An area of vegetated land designated to provide habitat for wildlife and native plant species.





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## Adaptation Strategies... Flexible plans to respond to changing conditions

### HAZARD

A natural or climate-driven event, like flooding or bluff collapse, that could cause harm to ecosystems, people, and/or property.

### KELP FOREST

An area of rocky seafloor where kelp plants attach and create a forest-like underwater habitat capable of supporting a diversity of marine species.

### LANDSCAPE ELEMENTS

Structures and features incorporated to protect or increase the resilience of the shoreline to the effects of coastal processes and sea level rise.

### LEASE BACK PROGRAM

A management tool where governments lease acquired properties to their original owners or third parties to generate revenue and limit maintenance costs, in vulnerable areas planned for long-term adaptation.

### LIVING SHORELINE

A combination of plants, sand, and sometimes small structures that protect the shore while supporting natural habitat and coastal processes.

### LOCAL COASTAL PROGRAM

The LCP is the City of Santa Cruz's coastal management plan that guides land use, development, and resource protection in line with the California Coastal Act.

### MITIGATION ACTIONS

Specific actions taken to reduce the impact of hazards before they happen, like improving drainage or reinforcing infrastructure to reduce the loss of life and property.

### NATURAL FEATURE RESTORATION

Man-made features constructed and engineered to replicate previously present natural features that may have eroded or been lost over time to mimic natural conditions.

### NATURE-BASED SOLUTIONS

Adaptation projects that rely on natural systems, materials, and habitats to buffer waves, reduce coastal erosion, and lessen flooding. Strategies include restoring dunes, wetlands, and reefs that protect the shoreline while also providing ecological benefits. Often known as living shorelines.

### PLANNED RELOCATION (MANAGED RETREAT)

A coastal management strategy that moves people, buildings, or infrastructure away from high-risk areas, allowing the shoreline to migrate naturally instead of attempting to hold the line with structural engineering.

### RESILIENCE

The ability of a community or ecosystem to absorb impacts and adapt to stress and change while retaining its basic structure and capacity to function.



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## Adaptation Strategies... Flexible plans to respond to changing conditions

<b>RISK</b>	The estimated likelihood of a hazard occurring and the magnitude of its impacts on people, services, facilities, and infrastructure within a community.
<b>ROCK REVETMENT</b>	A facing of stone (riprap) to protect an embankment or shore structure against erosion by wave action and currents.
<b>SALTWATER INTRUSION</b>	When seawater seeps into freshwater or groundwater supplies, displacing fresh water because of salt water's greater density, usually in coastal or estuarine areas.
<b>SEAWALL</b>	A coastal defense structure, often made of concrete, built along the shoreline to shield property and infrastructure from wave action, erosion, and coastal flooding.
<b>SENSITIVITY</b>	The degree to which a system is affected, either adversely or beneficially, by climate variability or change.
<b>SETBACK</b>	An area along the edge of the cliff within which all or certain types of new development are prohibited.
<b>SHORELINE ARMORING</b>	Hard structures like seawalls, riprap, or rock revetments built to protect land and infrastructure from erosion and wave damage. AKA: Armoring, Coastal Armoring, Shoreline Protective Device.
<b>STRESSORS</b>	Ongoing pressures that place continuous strain on systems or communities, reducing their ability to adapt or respond effectively to change.
<b>VEGETATION DUNE</b>	An area with mounds of loose, wind-blown sand with various stages of dune vegetation cover.
<b>VISION</b>	A shared picture of the future that guides how our community adapts to coastal change, while considering limiting factors.
<b>VULNERABILITY</b>	The degree to which people, property, or ecosystems are likely to be harmed. It reflects their level of exposure, sensitivity, and ability to anticipate, cope with, and recover from impacts.
<b>SEAWALL</b>	A coastal defense structure, often made of concrete, built along the shoreline to shield property and infrastructure from wave action, erosion, and coastal flooding.
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