

# The Revision and Update of the Hawai'i 2050 Sustainability Plan

Presentation to the  
Council on Ocean Resources

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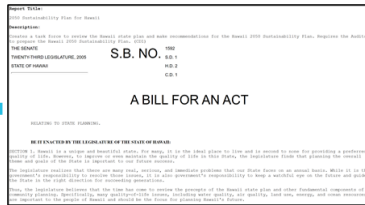
# Hawai'i 2050 Sustainability Plan



## Overview

# The History: Hawai i 2050 Sustainability Plan

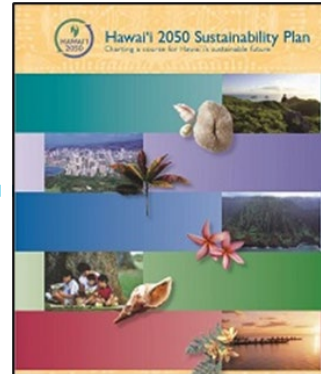
2005



## Act 8, Special Session Laws of Hawai'i 2005:

- Intended to replace the Hawai i State Plan
- Guide for the future long-term development of the State
- Required 10-Year update

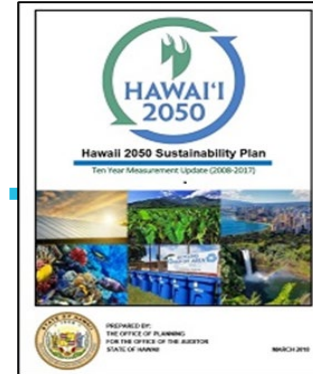
2008 - 2018



## Published in 2008:

- By State Auditor
- Long-term plan for Hawai i's sustainable future

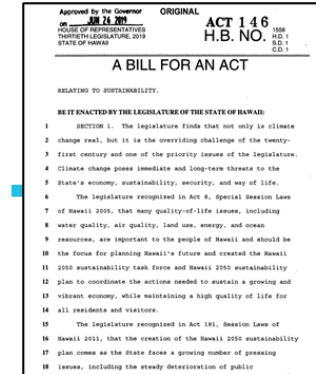
2018



## Published in 2018:

- 10-Year Measurement of progress
- Published by State Auditor with assistance of Office of Planning

2019



## Act 146, Session Laws of Hawai'i 2019:

- Revised law's scope: "plan shall serve as *state's sustainability and climate strategic action plan*"
- Codified as HRS §226-65

2020 - 2030



## Update in Progress:

- State Office of Planning updating 10-Year Strategic Action Plan

# The Process: Revision and Update

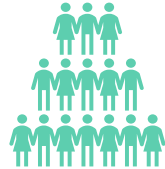


## Review Hawai'i's laws & plans

Review sustainability mandates, state agency plans, and county plans.



**150+** Laws, Plans, Policies, and Strategies Reviewed



## Public Outreach

Host public informational sessions throughout Hawaiian Islands.



**2** Public Surveys  
**9** Public Sessions  
**20** Advertisements  
**230** Participating organizations and agencies  
**600** Stakeholders Engaged  
**800+** Public Participants



## Coordinate with stakeholders

Coordinate with stakeholder groups to focus on and facilitate challenges.



**2** Distributed Drafts  
**2** Week Review per Draft  
**5** Public Presentations  
**1,550+** Stakeholder Emails  
**65** State & County Reviewing Agencies



## Determine future actions

Identify gaps and recommend future actions to achieve by 2030.



**8** Focus Areas  
**17** Case Studies  
**38** Strategies  
**250** Recommended Actions  
**117** Pages

# The Problem: Lack of Long-Term Planning and Coordination for Hawai'i's Sustainability



## Statutory Targets

Statutory targets for Hawai'i's sustainability are enacted to be achieved by 2020, 2030, 2035, 2045, and 2050; these require coordination and planning.



## Changing Climate

Hawai'i's climate is rapidly changing, climate action through planning and providing recommended actions through a coordinated manner is needed.



## Environmental Protection

Hawai'i's natural resources are being depleted through anthropogenic impacts and a changing climate.



## Economic Resiliency

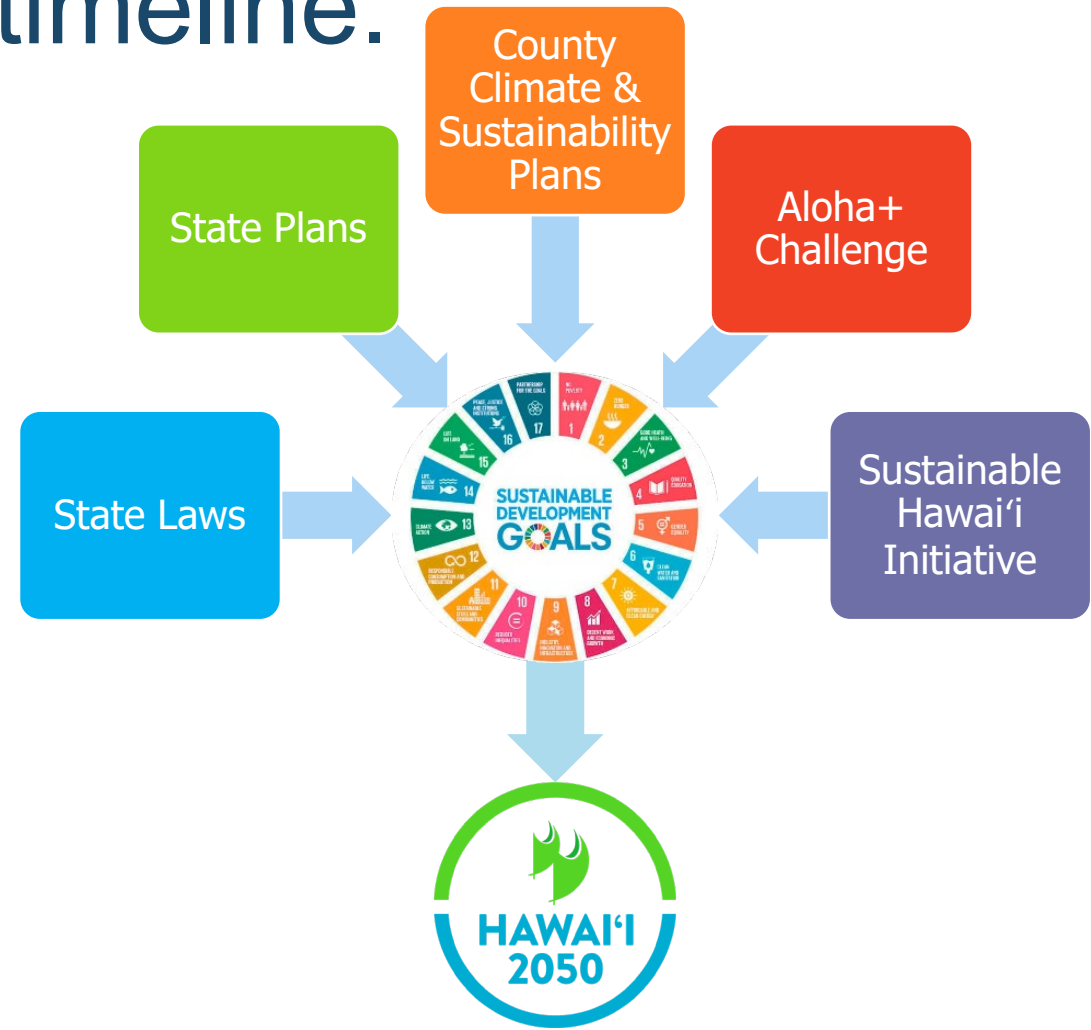
Hawai'i's economy is largely dependent on its tourism industry, economic diversity is needed for a resilient economy.



## Social & Cultural Equity

Hawai'i's history relies upon our Native Hawaiian indigenous community, as we plan for a sustainable Hawai'i, we need to ensure our Native Hawaiians and Kama'āina are protected to "keep Hawai'i, Hawai'i."

# The Product: U.N. SDGs as a framework to match the 2020-2030 planning timeline.



# **Hawai'i 2050 Sustainability Plan**




**Virtual Public Information  
Sharing Sessions and  
Public Survey Feedback**



# Summary of Public Sessions

- 9 public listening sessions held over Zoom
  - Each session had background presentations, two 15-20-minute breakout rooms for more in-depth discussion, and plenary report-outs
- 4 general sessions and 5 topic-focused sessions, which included:
  - Climate Adaptation
  - Natural Environment
  - Traditional Livelihoods
  - Social Stability and Human Health
  - Urban Communities and Built Environment




## Virtual Statewide Information Sharing Sessions

September 25–October 28, 2020

The State of Hawai'i Office of Planning is updating the *Hawai'i 2050 Sustainability Plan* to serve as the state's climate and sustainability strategic action plan; align the state's goals, policies, and actions with the [United Nations Sustainable Development Goals](#); and develop a roadmap of sustainability and climate change actions for 2020–2030.

**We want to hear from you!**  
Please join us at one of the virtual statewide information sharing sessions below. To register online, click on the date and time for the session that best aligns with your schedule and/or interests.

Comprehensive Sessions	Topic-focused Sessions
Friday, September 25, 12–1:30 pm	Climate Action and Resilience Friday, October 2, 9–10:30 am
Wednesday, September 30, 10–11:30 am	Natural Environment Monday, October 5, 1–2:30 pm
Tuesday, October 13, 2–3:30 pm	Rural Livelihoods and Traditional and Customary Practices Friday, October 9, 11 am–12:30 pm
Tuesday, October 27, 7–8:30 pm	Social Stability and Human Health Friday, October 16, 1–2:30 pm
	Urban Communities and the Built Environment Wednesday, October 28, 3–4:30 pm

 Office of Planning  
State of Hawaii

Questions? Please email  
[HI2050Sustainability@icf.com](mailto:HI2050Sustainability@icf.com)



# Survey Findings

## Actions to Take

### Government:

- Coordinate across state/county/federal entities to implement shared sustainability targets
- Develop plans to implement sustainability targets
- Fund sustainability initiatives and programs
- Incentivize innovation and sustainable practices in the private sector
- Incentivize renewable energy and public transportation
- Measure and report progress toward State's sustainability targets
- Focus on policies that improve self-sufficiency (e.g., local food production)
- Implement the long-term planning for State's sustainability targets

### Private sector:

- Operate sustainably
- Partner with other entities
- Pay fair wages
- Be socially responsible, set an example

### Non-profit organizations:

- Partner with other entities
- Conduct more outreach and education
- Advocate for communities

### People:

- Take on individual actions to live more sustainably
- Educate oneself, organize into community, and get involved

# Key Themes:

## Vision for Sustainable Hawai'i

- Look to the past (**cultural practices**) for lessons for the future
- Pursue goals that either **increase equity** or explicitly address equity issues in their implementation
- The pandemic offers a critical opportunity to reset and rethink the “new normal” to be **more sustainable and equitable** (e.g., investing in green space and affordable housing, boost support for women whose jobs and family roles may have been especially hurt by COVID-19)
- Rebuild the workforce by **empowering youth**, investing in **green and energy** workforce development, and upscaling the labor force to **compete in the global market**
- Pursue **innovative opportunities** in the **energy and agricultural sector** to enhance economic growth and food security
- Become **more self-sufficient**, rely less on imports and utilize existing resources, and build the economy to serve and be driven by **local populations** (for example, through local food production)

# Survey Findings

## Vision for a Sustainable Economic Recovery

- Diversified economy that relies less on tourism
- Rebuild sustainably, not returning to business as usual
- Increased self-sufficiency and local food production for local consumption
- Green job opportunities
- Investment in communities, education, people
- Investment in local infrastructure
- Grounded in Hawaiian values and guided by traditional knowledge

# Stakeholder Coordination:

## Collaborative Public Outreach

- 350 Hawai'i
- AECOM
- AES Hawai'i
- AHL
- Aloha Harvest
- Aloha United Way
- Arizona State University
- Bank of Hawai'i
- Blue Zones Project Hawai'i
- Building Industry Association of Hawai'i
- Building Owners and Managers Association of Hawai'i
- Chamber of Commerce Hawai'i
- Chaminade University of Honolulu
- Conservation Council for Hawai'i
- Conservation International
- Earth Justice Mid-Pacific Regional Office
- East West Center
- Elemental Excelsior
- Environmental Caucus of Hawai'i
- Faith Action Environmental Justice Task Force
- First Hawaiian Bank
- Hawai'i Alliance for Community Based Economic Development
- Hawai'i Alliance of Nonprofit Organizations
- Hawai'i Bicycling League
- Hawai'i Cattlemen's Council
- Hawai'i Children's Action Network
- Hawai'i Community Foundation
- Hawai'i Conservation Alliance
- Hawai'i Electric Vehicle Association
- Hawai'i Energy
- Hawai'i Farm Bureau
- Hawai'i Farmers Union United
- Hawai'i Food Industry Association
- Hawai'i Gas
- Hawai'i Green Growth
- Hawai'i Institute for Human Rights
- Hawai'i Medical Services Association
- Hawai'i Pacific Health
- Hawai'i Pacific University
- Hawai'i Philanthropy Forum
- Hawai'i Primary Care Association
- Hawai'i Public Health Institute
- Hawai'i Sea Grant
- Hawai'i Youth Climate Coalition
- Hawai'i Appleseed Center for Law and Economic Justice
- Hawaiian Airlines
- Hawaiian Electric Company
- Hawaiian Telcom, Inc.
- Healthcare Association of Hawai'i
- HHF
- Historic Hawai'i Foundation
- ILWU Hawai'i
- Integral Group
- Interstate Restoration
- Island Signal
- Kamehameha Schools
- Kanu Hawai'i
- Kaua'i Island Utility Cooperative
- Kawanui Farm
- Kohala Institute
- Kokua Hawai'i Foundation
- Kualoa Ranch
- Kupu Hawai'i
- LGBT Caucus of Hawai'i
- Mari's Gardens
- Marriott International
- Maui Economic Opportunity, Inc.
- New York University
- Office of Hawaiian Affairs
- Ola Hawai'i
- One World One Water
- Pacific Biodiesel
- Pacific Gateway Center
- Parents and Children Together
- PBR Hawai'i
- Pūlama Lāna'i
- Retail Merchants of Hawai'i
- Roth Ecological Design
- Sierra Club of Hawai'i
- SSFM Hawai'i
- Surfrider Foundation-Hawai'i Region
- Sustainable Coastlines of Hawai'i
- Sustainable Moloka'i
- Tetratex Hawai'i
- The Healy Foundation
- The Nature Conservancy of Hawai'i
- The Queen's Health Systems
- Trust for Public Land Hawai'i
- U.N. Department of Economic and Social Affairs – Division of Sustainable Development
- U.S. Green Building Council – Hawai'i Chapter
- U.S. Department of Agriculture – Hawai'i and Pacific Basin State Office
- U.S. Environmental Protection Agency – Region 9
- U.S. Federal Aviation Administration – Western Pacific Region
- U.S. Federal Emergency Management Agency – Region 9
- U.S. Federal Highways Administration – Hawai'i Division
- U.S. Fish and Wildlife Service – Pacific Region
- U.S. Geological Survey – Pacific Region
- U.S. Housing and Urban Development- Honolulu Field Office
- U.S. Indo – Pacific Command
- U.S. National Oceanic and Atmospheric Association – Pacific Islands Region
- Ulupono Initiative
- University of Hawai'i – Hilo
- University of Hawai'i – Mānoa
- University of Hawai'i – West O'ahu
- University of Hawai'i Economic Research Organization
- Urban Fabric
- Vulcan
- Wastewater Alternatives and Innovations
- WATG
- William S. Richardson School of Law
- Zero Waste Oahu

# Stakeholder Coordination:

## Collaborative Work with 65 State & County Agencies

- State of Hawai'i Office of the Governor
- Office of the Lieutenant Governor
- Members of the Hawai'i State Legislature
- Department of Accounting and General Services
- State Procurement Office
- Department of Agriculture
- Agribusiness Development Corporation
- Department of Business, Economic Development and Tourism (DBEDT)
- DBEDT – Business Development and Support Division
- DBEDT – Creative Industries Division
- DBEDT – Hawai'i Broadband Initiative
- DBEDT – Research and Economic Analysis Division
- Hawai'i Community Development Authority
- Hawai'i Housing Finance and Development Corporation
- Hawai'i State Energy Office
- Hawai'i Technology Development Corporation
- Hawai'i Tourism Authority
- Land Use Commission
- Natural Energy Laboratory of Hawai'i Authority
- State of Hawai'i Office of Planning – Coastal Zone Management Program
- State of Hawai'i Office of Planning – Land Use Division
- Public Utilities Commission
- Hawai'i Emergency Management Agency
- State Disaster Recovery Coordinator
- State of Hawai'i Office of Homeland Security
- Department of Education
- Department of Hawaiian Home Lands
- Department of Health (DOH)
- DOH – Chronic Disease Prevention and Health Promotion Division
- DOH – Clean Air Branch
- DOH – Clean Water Branch
- DOH – Hazard Evaluation and Emergency Response Office
- DOH – Primary Prevention Branch
- DOH – Safe Drinking Water Branch
- DOH – Solid and Hazardous Waste Branch
- DOH – Wastewater Branch
- Department of Human Services
- Hawai'i Public Housing Authority
- State Homelessness Coordinator
- State Commission on the Status of Women
- Department of Labor and Industrial Relations
- Department of Land and Natural Resources (DLNR)
- Commission on Water Resource Management
- DLNR – Division of Aquatic Resources
- DLNR – Engineering Division
- DLNR – Division of Forestry and Wildlife
- DLNR – Land Division
- DLNR – Division of State Parks
- Hawai'i Climate Change Mitigation and Adaptation Commission
- Hawai'i Invasive Species Council
- Kaho'olawe Island Reserve Commission
- DLNR – Office of Conservation and Coastal Lands
- Department of Transportation
- O'ahu Metropolitan Planning Organization
- University of Hawai'i
- UH – School of Ocean and Earth Science and Technology
- City and County of Honolulu Office of the Mayor
- Members of the Honolulu City Council
- City and County of Honolulu – Board of Water Supply
- City and County of Honolulu – Department of Environmental Services
- City and County of Honolulu – Department of Planning and Permitting
- City and County of Honolulu – Office of Climate Change, Sustainability, and Resilience
- City and County of Honolulu – Office of Economic Revitalization
- County of Hawai'i Office of the Mayor
- Members of the Hawai'i County Council
- County of Hawai'i – Department of Planning
- County of Hawai'i – Department of Research and Development
- County of Hawai'i – Department of Environmental Management
- County of Kaua'i Office of the Mayor
- Members of the Kaua'i County Council
- County of Kaua'i – Department of Planning
- County of Kaua'i – Department of Public Works
- County of Kaua'i – Kaua'i Emergency Management Agency
- County of Kaua'i – Office of Economic Development
- County of Maui Office of the Mayor
- Members of the Maui County Council
- County of Maui – Department of Environmental Management
- County of Maui – Department of Planning
- County of Maui – Department of Water Supply
- County of Maui – Office of Climate Action, Sustainability, and Resilience

# **Hawai'i 2050 Sustainability Plan**



## **Findings and Recommendations**



# 8 Focus Areas Recommended for 2020-2030:



## 1. Promote a Sustainable Economic Recovery

Through strategies that support local agriculture, green workforce development and education, and regenerative and sustainable tourism.

## 2. Reduce Greenhouse Gas Emissions

By continuing to monitor the state's emissions and reduce greenhouse gas emissions through strategies in the energy, transportation, and waste sectors.

## 3. Improve Climate Resilience

By continuing to monitor and adapt to climate impacts and take actions to increase the resilience of the natural and built environments and their occupants.

## 4. Advance Sustainable Communities

Through strategies that improve land use and access to green space, advance sustainable practices in schools, and encourage sustainable buildings and infrastructure.

## 5. Advance Equity

By ensuring equitable access to resources, addressing affordable housing and homelessness crises, and improving gender equity.

## 6. Institutionalize Sustainability Throughout Government

By increasing the government's capacity through institutionalized collaboration to address sustainability and greening government operations.

## 7. Preserve the Natural Environment

By including a focus on clean water, marine resources and ecosystems, and natural resource protection.

## 8. Perpetuate Traditional Ecological Knowledge and Values

Throughout Hawaii as the state tackles sustainability and climate challenges.



# Aligning the SDGs with the Existing State Efforts, Sustainable Hawai'i Initiative and Aloha+ Challenge

34 pages will provide a high level summary of Hawai'i's commitments working toward achieving the SDGs, including:

- Hawai'i's laws, policies, and strategic plans
- Sustainable Hawai'i Initiative
- Aloha+ Challenge



## LIFE BELOW WATER

### Sustainable Development Goal 14

Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

This goal aims to balance the mindful use of marine and coastal resources and conservation. Targets to achieve this goal include:

- Preventing and reducing land-based debris and nutrient pollution that causes harm to marine and coastal environments
- Regulating and managing the use of marine and coastal resources

### Overview

Climate change, including rising air temperatures, changing rainfall patterns, drought, flooding, and saltwater contamination, are threatening marine ecosystems. The changing climate also impacts local biodiversity of native species. Rising ocean temperatures and acidification threaten the sustainability of fisheries and coral reefs. Coral reefs are a key draw for Hawai'i's tourism industry, adding over \$350 million to the local economy each year. However, coral bleaching has already begun (DLNR 2017). For example, elevated ocean temperatures led to extreme coral bleaching in 2014-2015, with a nearly 50% decline in coral cover in west Hawai'i and a 20-40% decline in Maui. Mass coral bleaching events are anticipated to continue if no climate action is taken (Office of Planning 2020).

Currently, Hawai'i's residents are concerned about the human impact on nearshore areas (Office of Planning 2020). There is also the concern for the health of aquatic ecosystems and the migration of native fish species as ocean temperatures increase due to climate change. Previous fish mortality events in O'ahu have been connected to slackened trade winds and elevated surface water temperatures. As an island community, many Hawai'i residents enjoy a seafood diet and rely upon subsistence living, including fishing; however, declines in tuna and billfish populations are projected to impact the fishery industry with 2-5% losses per decade (USGCRP 2018).

There is the need to balance agricultural productivity on the islands, which boost Hawai'i's food security, self-sufficiency and access to fresh food, with the pollution to nearshore waters caused in part by intensive agricultural practices. Runoff from residential areas is also a contributing source of water pollution. There is a nascent recognition of the need to protect groundwater-dependent ecosystems.

One of the three main focus areas of the 2020 Ocean Resources Management Plan is land-based pollution, which highlights polluted stormwater runoff as a pervasive and widespread issue within Hawai'i's watersheds (Office of Planning 2020).

### VOLUNTARY INITIATIVES

The Aloha+ Challenge has a target to reverse the trend of natural resource loss by increasing freshwater security, watershed protection, community-based marine management, invasive species prevention and native species restoration. The challenge also includes the goal to significantly increase the percentage of Hawai'i's marine waters under active management by 2030. The Sustainable Hawai'i Initiative includes a goal to protect 30% of priority watersheds and effectively manage 30% of nearshore ocean waters by 2030.

### Hawai'i's Commitments to Address SDG 14



#### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-11 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Land-Based, Shoreline, and Marine Resources	Describes objectives regarding the sustainable use of marine resources and the protection of fragile environmental resources, including species and habitat conservation and do-no-harm principles.
Hawai'i Revised Statutes Chapter 343D: Water Pollution	Defines the rules and regulations for water pollution management in Hawai'i under the purview of the Department of Health.
Hawai'i Revised Statutes Chapter 205A: Coastal Zone Management	Outlines the rules and regulations for the management of Hawai'i's coastal zone, including the specification of special management areas.
Hawai'i Revised Statutes Chapter 187A: Aquatic Resources	Outlines the policies relating to how aquatic resources can be used in Hawai'i, including fishing rights and how to prevent the spread of aquatic invasive species.
Hawai'i Revised Statutes Chapter 188: Fishing Rights and Regulations	Specifies further regulations relating to fishing in the waters of Hawai'i, including licensing and provisions for subsistence fishing.
Hawai'i Revised Statutes Chapter 188F: West Hawai'i Regional Fishery Management Area	Establishes the West Hawai'i Regional Fishery Management Area in order to improve the management of consumptive and non-consumptive uses of aquatic resources in that region.
Hawai'i Revised Statutes Chapter 189: Commercial Fishing	Outlines the State regulations surrounding commercial fishing, including reporting requirements, licensing, approved and prohibited techniques, and the purchase of fishing vessels.
Hawai'i Revised Statutes Chapter 190: Marine Life Conservation Program	Establishes marine life conservation districts and defines what activities are permitted within those districts.
Hawai'i Revised Statutes Chapter 195D: Conservation of Aquatic Life, Wildlife, and Land Plants	Specifies how various species will be protected, and how the state will assist in the recovery of species' population, health, or ecosystems.



#### STRATEGIC PLANS

Hawai'i Nonpoint Source Management Plan: 2021-2025 (2021)	Establishes goals, objectives, strategies, and milestones to reduce and prevent nonpoint source pollution and improve water quality, guiding the state's nonpoint source pollution management efforts.
Office of Planning's Ocean Resources Management Plan (2020)	Identifies 18 strategic actions across three focus area goals (development and coastal hazards, land-based pollution, and marine resources) to advance the state's management of ocean resources.
Holomua: Marine 30x30 (2020)	Provides a vision of a healthy nearshore ecosystem with abundant resources that allow the people of Hawai'i to enjoy coastal waters, support local livelihoods, and feed their families. Includes four key pillars to effectively manage Hawai'i's nearshore waters with at least 30% established as marine management areas by 2030: place-based planning, pono practices, monitoring, and protection and restoration.
Hawai'i Coral Reef Strategy 2030 (2020)	Outlines recommendations for projects that address coral reef ecosystem planning and summarizes the impact of previous projects on Hawai'i's reef resiliency.
Water Resource Protection Plan (2019)	Component of the Hawai'i Water Plan that seeks to protect and sustain statewide ground and surface water resources, watersheds, and natural stream environments. Recognizes that groundwater dependent ecosystems (GDEs) support a variety of valuable ecosystem services, such as flood control, water supply, water purification, recreational opportunities, biodiversity, and traditional and customary rights. However, the current approach for managing ground water in Hawai'i does not explicitly account for the ground water discharge needs of GDEs.
Coral Bleaching Recovery Plan (2017)	Promotes the recovery of coral reefs following the 2014-2015 global coral bleaching event by identifying which management interventions are the most likely to promote recovery.



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# Sustaining Hawai'i Case Studies

34 pages will spotlight collaborative efforts “Sustaining Hawai'i” across the Hawaiian Islands between the government, private sector, non-profit organizations, and local communities.

Examples:

- COVID-19 Double Bucks Assistance
- Hawai'i Alliance of Watershed Partnerships
- Kaua'i Extreme Flooding Resilience Hub
- Pu'uhonua o Puna Resilience Hub
- Regenerative Tourism:

Hanauma Bay and Hā'ena State Park

## SUSTAINING HAWAII

Coral, or ko'a, is the first species named in the Kumihilo. This is one of the many ways Kanaka Maoli underpin the close relationship between life on land and sea. Coral's cultural significance, along with its ecological and economic importance, is why the declining health of Hawai'i's corals in the face of human pressures and climate change evokes great concern.

As a popular destination for coral reefs, Hanauma Bay on O'ahu is no different in facing this dual threat. The bay's coral colonies face stress from multiple bleaching events, and with nearly 845,000 visitors in 2019 alone, the coral colonies also show reduced growth in more disturbed areas (Star Advertiser 2020, Severino et al. 2020). The COVID-19 global pandemic further demonstrated the effects of visitor traffic: after Hanauma Bay was closed for safety purposes in March 2020, water clarity improved by 64% and as much as 19.5 feet, larger fish were spotted in the reef, and there was a reported increase in endangered Hawaiian monk seal activity (Star Advertiser 2020, Serota 2020). The bay's closure also allowed the nonprofit Friends of Hanauma Bay, in partnership with DLNR-DAW's Coral Restoration Nursery, to begin coral restoration to repair damage to the reef (Friends of Hanauma Bay 2021). When Hanauma Bay reopened in December 2020, the City and County of Honolulu implemented COVID-19 capacity limits, shortened operation hours, increased non-resident visitor fees, and closed two days a week, which allowed for a reopening while continuing reduced pressure on the coral reef (Star Advertiser 2020). Although challenges remain, as the bay reopens further, an unmatched opportunity will be provided to monitor visitor impacts from a new baseline and determine the best mechanisms to steward a more thriving Hanauma Bay.



Photo Left: Friends of Hanauma Bay and Ocean Defenders Alliance Hawai'i partnered to launch a citizen science study during the COVID-19 pandemic safety closure on Hanauma Bay's Coral Colony Temporal Texture Study to determine baseline health of coral within Hanauma Bay's inner reef. Photo Credit: Friends of Hanauma Bay.

Photo Right: Hanauma Bay on the island of O'ahu reopened to the public after being closed for 9 months due to the COVID-19 pandemic. The COVID-19 closure rejuvenated the bay's marine environment, providing significant ecosystem restoration, the return and growth of wildlife and endangered species, and a 64% improvement in water clarity. Photo Credit: Friends of Hanauma Bay.

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# Alignment with the ORMP

- Aligned with the ORMP's 3 Focus Areas:
  1. Development and Coastal Hazards
  2. Land-Based Pollution
  3. Marine Ecosystems
- Shares recommendations from ORMP
- References and Aligns ORMP in Sustainable Development Goals:

- SDG 6: Clean Water and Sanitation
- SDG 13: Climate Action
- SDG 14: Life Below Water
- SDG 15: Life Above Land



## CLIMATE ACTION

### Sustainable Development Goal 13

Take urgent action to combat climate change and its impacts

This goal includes targets to reduce greenhouse gas emissions, increase resilience, and adapt to the impacts of climate change

#### Overview

Efforts to understand, mitigate, and adapt to the impacts of climate change are critical due to Hawai'i's isolated geography, unique cultural heritage, and heavy reliance on the tourism industry. Hawai'i anticipates an estimated 3.2 feet of sea level rise by 2100. Climate change impacts, such as sea level rise and more frequent and intense extreme weather events (hurricanes, flood, droughts), pose an increasing threat to infrastructure and communities. Sea level rise is especially hazardous as it will affect many critical transportation systems, such as regional highways, airports, and harbors. Hawai'i has seen an increase in extreme rainfall events from 1940 to present in addition to an increase in more consecutive dry days (USGCRP 2018).

The Fourth National Climate Assessment projects the impacts of rising sea levels and other climate change impacts will result in the loss of 550 cultural sites in Hawai'i, more than 6,500 structures becoming unusable, and roughly 20,000 displaced residents. According to the State of Hawai'i's Sea Level Rise Vulnerability and Adaptation report, statewide losses due to climate change are projected to total more than \$19 billion (USGCRP 2018).

Hawai'i Revised Statutes §342B-71 enacted a statewide target to reduce GHG emissions to 1990 levels by 2020. Total GHG emissions in Hawai'i in 2017 were 17.87 million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e), roughly 8% lower than 1990 levels. Statewide projections indicated Hawai'i was on track to meet the GHG emissions target by 2020.

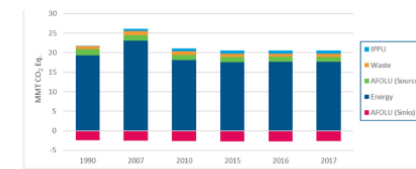


Figure 2: Hawai'i GHG Emissions by Sector for 1990, 2007, 2010, and 2015-2017. Source: Hawai'i State DOH (2021)

Figure 2 shows emission trends by sector for each year that Hawai'i has conducted a GHG inventory. The energy sector is the largest source of emissions in Hawai'i, accounting for 86% of total emissions. Emissions from transportation accounted for the largest share of energy sector emissions in 2017, followed by stationary energy combustion emissions largely driven by emissions from electric power plants, petroleum refineries, and industry. Agriculture, forestry, and other land use (AFOLU), waste, and industrial processes and product use (PFIU) sectors accounted for 6, 4, and 4% of total emissions, respectively in 2017 (DOH 2021a).

AFOLU is the only sector that overall, sequesters carbon dioxide from the atmosphere. Healthy native forests and sustainable agricultural practices are essential to stabilizing soil organic carbon which accounts for over half of the carbon dioxide stored in Hawai'i's terrestrial ecosystems (Selman et al. 2017).

The State of Hawai'i is committed to reducing GHG emissions, adapting to climate change, and incorporating climate change considerations into decision-making. In April 2021, the State of Hawai'i adopted Senate Concurrent Resolution 44, and became the first state in the United States to declare a climate emergency.



### Hawai'i's Commitments to Address SDG 13

#### STRATEGIC PLANS

Hawai'i Highways Climate Adaptation Plan (2021)	Summarizes research on how climate change will impact Hawai'i's roadways. Outlines strategies to achieve greater network resilience in the face of long-term environmental risks.
Nature-Based Resilience and Adaptation to Climate Change in Hawai'i Working Paper (2021)	Highlights opportunities for Hawai'i to implement nature-based strategies to adapt to and mitigate climate change.
Ocean Resources Management Plan (2020)	Identifies 18 strategic actions across three focus area goals (development and coastal hazards, land-based pollution, and marine resources) to advance the State's management of ocean resources.
Guidance for Addressing Sea Level Rise in Community Planning in Hawai'i (2020)	Provides additional guidance following on the 2017 Sea Level Rise Vulnerability and Adaptation Report. Assists county planners to build upon and improve existing efforts to address sea level rise for four key topics: 1) vulnerability assessment, 2) land use and development alternatives, 3) plan and policy alignment, and 4) adaptive management.
Feasibility and Implications of Establishing a Carbon Offset Program for the State of Hawai'i (2019)	Evaluates the feasibility for the Hawai'i State Government to foster additional greenhouse gas reductions through carbon offset credits.
State of Hawai'i Statewide Coastal Highway Program Report (2019)	Develops a scientifically rigorous methodology to assess and rank the susceptibility of the state's coastal roads to erosion and structural degradation due to ocean hazards such as waves, currents, tides and sea level rise. Presents a new index methodology that considers the principal factors that determine coastal erosion and road degradation. The method is based on determination of the index CRESI (Coastal Road Erosion Susceptibility Index), which is evaluated at discrete locations along coastal roads in relatively close proximity to the ocean, and segments the coastal roads to have low, medium, and high susceptibility to structural degradation.
Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawai'i (2019)	Makes findings regarding retreat programs and their relative significance to Hawai'i and a specific multi-prong recommendation regarding the feasibility of retreat in Hawai'i.
State of Hawai'i 2018 Hazard Mitigation Plan (2018)	Provides a five-year strategy to reduce risk and losses from future natural hazard events. Promotes resiliency and sustainability, aids in consistent evaluation, and provides a means to reduce the costs associated with disaster response and recovery. Includes a mitigation action plan with information such as estimated costs, potential funding sources, anticipated timelines, and the expected benefits and avoided losses of each hazard mitigation action identified.
Sea Level Rise Vulnerability and Adaptation Report (2017)	Provides a statewide assessment of Hawai'i's vulnerability to sea level rise and nine recommendations to reduce exposure to its impacts.

Photo Right: Waikiki, O'ahu.  
Photo Credit: State of Hawai'i, Hawai'i Tourism Authority.



# Hawai'i 2050 Sustainability Plan



In Summary

# In Summary:

- Provides a timeline of high-level “Hawai‘i’s Sustainability and Climate Journey” spanning between 1998-2021
- Provides a comprehensive listing of the State of Hawai‘i’s Legal and Statutory Sustainability Targets between 2000-2050
- Highlights Hawai‘i’s commitments to meet each 17 U.N. SDG
- Aligns Hawai‘i’s laws, policies, plans, Sustainable Hawai‘i Initiative, and Aloha+ Challenge to the SDGs
- Reviewed 150+ State laws, policies, plans, strategies, and working papers
- Spotlights collaborative efforts “Sustaining Hawai‘i” across the Hawaiian Islands between the government, private sector, non-profit organizations, and local communities
- 117 Pages
- Identifies 8 Focus Areas for the “Decade of Action” (2020-2030)
- Recommends 38 Strategies to meet the 8 Focus Areas
- Offers 250+ Recommended Actions within the 38 Strategies

# Mahalo!

Visit our website!  
<https://hawaii2050.hawaii.gov>

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