



Desktop Drawdown Pathways Analysis in Hawai‘i’s Natural and Working Lands and Nearshore Waters

Update to Greenhouse Gas Sequestration
Task Force

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Purpose

Identify opportunities to increase GHG sequestration and reduce GHG emissions through land use practices and activities in Hawaii, emphasizing the following sectors:

- Agriculture
- Agroforestry
- Aquaculture
- Forestry
- Ranching
- Urban Forestry

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- Currently available and scaling?
 - Economically viable?
 - Potential to reduce GHGs in the atmosphere through avoided emissions or sequestration?
 - Any negative results? If so, do positive benefits outweigh the negatives?
 - Sufficient data to be able to model the solutions at global scale?

DRAWDOWN

THE MOST COMPREHENSIVE
PLAN EVER PROPOSED TO
REVERSE GLOBAL WARMING
EDITED BY PAUL HAWKEN



Photo credit: Scot Nelson



Approach

1. Review Project Drawdown solutions
2. Select solutions applicable to Hawai'i
3. Identify scale of opportunity
4. Estimate likely costs
5. Identify policy incentives and disincentives
6. Modify ranking of each solution for Hawai'i

Solutions
Applicable
for Hawai'i
Lands

Food Sector Solutions

Silvopasture

Regenerative Agriculture

Tropical Staple Trees

Conservation Agriculture

Tree Intercropping

Managed Grazing

Farmland Restoration

Multistrata Agroforestry

Perennial Biomass

Nutrient Management

Farmland Irrigation

Biochar

Land Use Sector Solutions

Tropical Forests (restoration)

Temperate Forests (restoration)

Peatlands (protection)

Afforestation

Bamboo

Forest Protection

Indigenous Peoples' Land Management

Coastal Wetlands (protection)

Project Drawdown Priority by Land Type

Cropland (non-degraded)	Degraded Cropland	Grassland (non-degraded)	Degraded Grassland	Forest (non-degraded)	Degraded Forest	
1. Regenerative Agriculture	1. Tree Intercropping	1. Silvopasture	1. Multistrata Agroforestry	1. Peatland Protection	1. Restoration + Protection (Tropical or Temperate)	
2. Conservation Agriculture	2. Tropical Staple Trees	2. Managed grazing	2. Tropical Staple Trees	2. Coastal Wetlands	2. Afforestation	
3. Multistrata Agroforestry		3. Multistrata Agroforestry	3. Farmland Restoration	3. Indigenous People's Land Management	3. Bamboo Cultivation	
4. Afforestation			4. Afforestation	4. Forest Protection		
+Nutrient Management		+Nutrient Management	+Nutrient Management	5. Bamboo cultivation		
+Farmland Irrigation		+Farmland Irrigation		6. Perennial Biomass		
+Biochar	+Biochar					



Hawai'i Policy Targets

- 100% increase in local agriculture production by 2020
- Stronger invasive species policy, infrastructure and capacity by 2027
- 30% of priority watersheds protected by 2030
- 30% of nearshore marine areas effectively managed by 2030
- Complete transfer to clean, renewable energy by 2045



Photo credit: Haleakala Ranch

Product

Inventory and Hawai'i-specific ranking of each solution, informed by:

- Potential for total greenhouse gas sequestered,
- Co-benefits,
- Potential GHG emissions and risks,
- Potential monetary costs, and
- Incentives and funding options.

Important Framing Concepts

- Global view of emissions
- Identify where GHG-beneficial decisions can be incentivized for landowners and managers
- Acknowledge important research is still underway





Ongoing Work

- Scale of opportunities
- Solution-specific cost information for Hawai'i
- Update policy incentives and disincentives

Challenges

- Cost information may not currently exist
- Aquaculture and urban forestry slightly different approach



A photograph of a papaya orchard. The trees are tall and slender, with large, heart-shaped green leaves. Many of the trees have clusters of green papayas hanging from their stems. The background shows a dense forest of similar trees, suggesting a large-scale agricultural operation. The lighting is bright, indicating a sunny day.

Suggestions?



Mahalo!