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HAWAI'I

Hawai'i's natural beauty is world-renowned, globally unique, and central to Hawaiian culture. The state's natural infrastructure includes its coral reefs and coastal fisheries, its diverse forests, which source the islands' fresh water, and traditional and modern agriculture. These lands and waters support local communities, livelihoods, economies, and Indigenous culture. With thoughtful investments and stewardship, Hawai'i's natural infrastructure can support Hawaiian communities even better in the future.

NATURE-BASED SOLUTIONS HELP REDUCE THE RISK OF FLOODING.

In Hawai'i, flooding is caused by rainfall from storms, storm surges, tsunamis, dam failures, and tidal.¹ Coastal flooding will continue to worsen as sea level rises. Climate projections for the State of Hawai'i indicate an overall decline in rainfall; however, the state will experience an increase in heavy rain events, causing more frequent or intense flash flooding. Sea level is also projected to rise, increasing the risk of coastal flooding from hurricanes and tropical storms.

Coral reefs provide coastal buffer and protection from wave and flood impacts.² Protecting wetlands and riparian areas can also be a cost-effective way to minimize flooding-related damage.³ Recent studies have found:

- Preserving the upper meter of coral reefs on the main islands of Hawai'i avoids \$836 million in annual losses to properties and jobs.⁴
- Conserving large areas of floodplain resulted in cumulative avoided future flood damage exceeding land acquisition costs by a factor of at least 5:1.⁵

Indigenous communities, including those in Hawai'i, have employed nature-based solutions to mitigate flood risks for many centuries.⁶

Restoring He'eia.⁷ The Nature Conservancy helped remove invasive red mangroves, restore traditional irrigation systems and lo'i kalo in the wetlands, and introduce other Hawaiian crops in surrounding areas of a 405-acre He'eia farm. This project is part of a larger Indigenous-led effort to restore He'eia ahupua'a, implemented by Kāko'o 'Ōiwi, Paepae o He'eia and other local organizations committed to perpetuating traditional Hawaiian knowledge and practices. The partnership works to restore habitats, water flows and traditional agriculture and aquaculture to improve conditions for people, native wildlife, reefs and fisheries.

INVESTING IN NATURE SUPPORTS CRITICAL FISHERIES AND COASTAL RESTORATION.

Fishing is a way of life in Hawai'i and part of our cultural heritage.⁸ Community-based co-management of nearshore fisheries using traditional practices and Indigenous knowledge perpetuates our unique culture and helps ensure sustainable resources for future generations through rules like size/bag limits, seasonal closures, and specific harvesting methods. Efforts are underway at Hā'ena, Mo'omomi, Miloli'i, Kīpahulu, Ka'ūpūlehu/Hui Kahuwai, and Kīholo/Hui Aloha Kīholo.

Hawai'i's seafood industry supports over 10,000 jobs with income of \$250 million and \$366 million of value added to the state's economy.⁹ Hawai'i's overall marine economy supports 4,868 businesses, 97,478 employees, \$4.4 billion wages, and \$9.2 billion in overall economic output.¹⁰

Coastal restoration projects can create jobs and stimulate economic growth in local communities. Recent NOAA-funded coastal resilience projects have generated an estimated 292 jobs, \$19.6 million in income, \$26.3 million in value added, and \$41.3 million in economic output for Hawai'i.¹¹

NATURAL INFRASTRUCTURE SUPPORTS FORESTS AND FARMING.

Hawai'i's agriculture is a diversified, high-value industry, with a focus on specialty crops.¹² The state's farmers are leaders in protecting and stewarding working lands to maintain the state's \$37.9 billion agricultural economy, which supports 215,985 jobs with \$12.1 billion in wages.¹³ Unfortunately, Hawai'i lost 7% of its agricultural land in just five years from 2017 to 2022.¹⁴

Hawai'i's native forests are critically important to the state's economy, its people, and its culture.¹⁵ Hawai'i's forests are the source of the islands' fresh water, are central to Native Hawaiian culture, protect irreplaceable biodiversity, and provide scenic value, recreational opportunities, forest products, flood protection, improved air quality, and many other amenities. Sustainable forest management is a multi-generational undertaking, and with a continued dedicated effort, the endeavors of the past will help ensure healthy and productive forests in the future.

Harvesting and processing operations provide employment opportunities in rural island communities, including jobs for foresters, woodworkers, sawyers, nursery growers, truck drivers, millers, tree planters, researchers, and manufacturers. The manufacturing output of Hawai'i's forests is \$222 million annually.¹⁶

NATURE-BASED SOLUTIONS ARE IMPORTANT FOR PROTECTING GROUNDWATER SUPPLIES.

Groundwater provides a majority of drinking water in the State of Hawai'i, and reduced rainfall reduces the amount of water recharging the aquifers.¹⁷ If drought events continue to increase, dry areas could see more fires and strained water supplies. Healthy watersheds are critical to replenishing Hawai'i's groundwater aquifers and also reduce polluted runoff into our nearshore waters and support healthy stream ecosystems.

INVESTING IN NATURAL INFRASTRUCTURE CAN HELP REDUCE THE RISK OF WILDFIRES.

Wildfires in the State of Hawai'i destroy native forests, alter soil composition, and threaten human communities.¹⁸ Each

year, approximately 0.5% of the State of Hawai'i's total land area burns, more than almost any other state. Over 99% of the total wildfires are human-caused. In the last 10 years, nearly 1,000 wildfires burned an average of 20,000 acres per year statewide. On Aug. 8, 2023, wind-driven wildfires on the island of Maui killed over 100 people, destroyed more than 2,200 structures, and caused about \$5.5 billion in damage.¹⁹ It was the fifth deadliest wildland fire in U.S. history and the worst natural disaster in Hawai'i's history.

Hawai'i's native ecosystems are not fire-adapted.²⁰ In many cases, once an area burns, it is replaced by fire-prone non-native species. Fires endanger native ecosystems and biodiversity. After wildfires, erosion and flood vulnerability increases, and damaged watersheds can endanger water supplies and water quality. Currently, over 25% of the state is covered by non-native, fire-prone grasses and shrubs.

Forests Stewarded for Fire Prevention. The Nature Conservancy's preserves are home to some of Hawai'i's last remaining native forests, which are the only home for our endangered native honeycreepers and other birds.²¹ TNC is bolstering its long-standing fire prevention work by creating firebreaks, clearing flammable grasses from access roads, and maintaining emergency response infrastructure. Where forest preserves are surrounded by former pastureland, TNC works with local ranchers to reduce invasive, fire-prone grasses. TNC has joined forces with watershed partner Haleakalā Ranch, and community volunteers to reduce fuels and replant native trees in Waikamoi Preserve on Maui. Together, the partners are building a landscape-wide strategy that protects native forests, restores habitat for endangered birds, and helps Maui communities heal from wildfire damage.



**For the full report
Nature's Dividends: The Economic, Health,
and Safety Benefits of Investing in Nature.**

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