



US-AFFILIATED PACIFIC ISLANDS

Overview | September 2020



Photo: USFS Pacific Southwest Region, S&PF

OVERVIEW OF US-AFFILIATED PACIFIC ISLANDS

The US-Affiliated Pacific Island members of the Council of Western State Foresters (CWSF) and Western Forestry Leadership Coalition (WFLC) include the Territory of American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Territory of Guam, State of Hawai'i, Republic of Marshall Islands, and Republic of Palau.

Forests cover 45% of the total area of these islands, and they face unique challenges compared to the mainland western states in terms of scale, capacity, and threats to forest land.

LANDSCAPE

The landscapes of US-Affiliated Pacific Islands are fundamentally different from the mainland of the western United States, both ecologically and culturally. The islands are largely tropical rainforests and home to a hotbed of biological diversity found nowhere else on Earth. As islands, these environments are uniquely threatened by climate change and invasive species. Climatic shifts to a warmer and drier environment have made the islands increasingly susceptible to wildfire. While these fires are strictly smaller than their counterparts on the mainland, they are just as devastating and typically burn a greater amount of land by percentage than fires on the mainland United States.

CULTURE

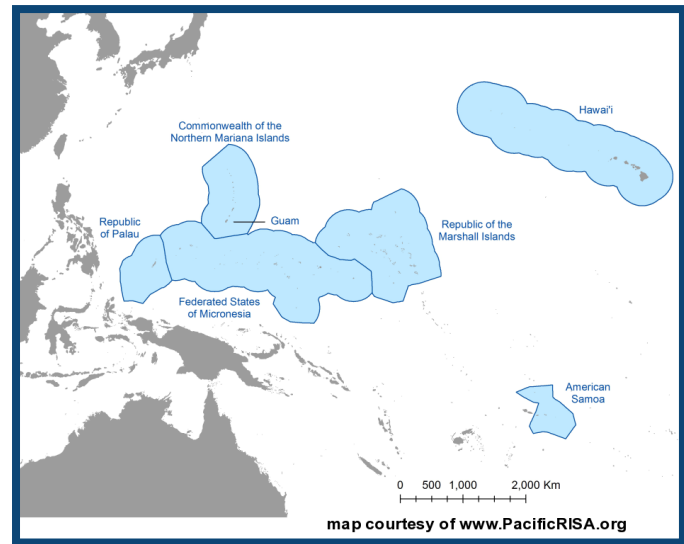
Culturally, the Pacific Islands are very different from the mainland. While English is a common language throughout the islands, forestry staff include native speakers of at least ten additional indigenous languages. In turn, these professionals serve communities who speak an even wider variety of languages and dialects. Land tenure systems are also complex and differ from island to island. On many islands, a large amount of land is held under a traditional system in which a family or clan leader has rights and responsibilities that overlap with harvesting or management rights and responsibilities held by individuals and families. Forestry projects therefore often have both private-ownership and community-based dimensions, but due to the prevalence of private ownership, cross-boundary coordination can be especially challenging or impossible. Aside from strong community ties, many island forestry agencies have strong relationships with other agencies and non-government organizations that expand capacity and enable them to implement successful projects, in spite of smaller staffs than typically found in mainland forestry agencies.



Photo: Hawai'i Dept. of Land & Natural Resources

GEOGRAPHY

Geography in the islands presents unique challenges and is an expensive issue for the Pacific Islands to overcome in forestry projects. Each island jurisdiction's capital (beyond Hawai'i) is served by air with one to eight hour flights, two to seven days a week (prior to the COVID-19 pandemic). Most jurisdictions are composed of high islands and atolls that require additional flights, commercial or chartered small planes, or only rare boat service. Communications with many atolls is still primary by radio. In addition, the islands lay in the path of natural disasters, including tropical cyclones, that are increasing in frequency and severity. Due to limited capacity and island infrastructure, disaster preparedness, response, and recovery is extremely limited in comparison to the assets available on the mainland. Given the geographic size of the islands, "landscape scale" also takes on entirely new meaning. A restoration project of only ten to twenty acres can have a profound impact on species and communities.



Forestry agencies in the islands also operate on a much smaller scale than typical mainland agencies but frequently have a broader scope of work, often with the direct inclusion of agriculture and wildlife. Biologically, culturally, and geographically different, the US-Affiliated Pacific Islands are nonetheless home to outstanding forests.

ISSUE AREAS

CLIMATE CHANGE

Climate change has immediate and pressing consequences for the US-Affiliated Pacific Islands. Sea level rise is anticipated to exacerbate inundation, storm surge, and erosion, leading to a reduction in island size that threatens communities, already limited infrastructure, and livelihoods. Natural disasters, including tropical storms, are increasing in frequency and intensity. These extreme events easily decimate slow-regenerating island forests.

INVASIVE SPECIES

Invasive species pose an especially serious challenge to the US-Affiliated Pacific Islands. Without natural predators and within the confines of a small, island landmass, invasive species overtake native species and destroy natural habitats at alarming rates. The coconut rhinoceros beetle has killed off palms, one of Guam's most abundant trees, at an alarming rate since 2007. A key objective for the islands is focused around biosecurity - preventing the spread of invasive species between islands.

WILDFIRE

Wildfire in the US-Affiliated Pacific Islands occurs on a much smaller scale than the mainland western states. However, it is no less catastrophic for the islands, and the scale of devastation is equal to or greater than what is experienced on the mainland. Fire is not endemic to the islands, though it has been used historically, but the consequences of human-caused wildfires are devastating to both the natural and built environment. One of the most effective strategies to reduce the impacts of wildfire in the Pacific Islands is restoration using shaded fuel breaks. Fire occurs mostly in savannas and along forest edges during the dry season, from December to May. While savannas typically comprise most of the burned areas, fires also burn significant native and nonnative forests. Through sediment run-off, fire in the islands endangers communities, native ecosystems, and nearshore coral reefs.

WATER

Water quality and quantity is a serious issue for the US-Affiliated Pacific Islands. As sea levels rise, saltwater intrusion into freshwater reduces both supply and quality. This directly impacts the ability for humans to live on these islands as well as agriculture and agroforestry.

AGROFORESTRY AND FOOD SECURITY

All the Pacific Islands, including Hawai'i, rely on imported food products. When imports are delayed, due to storms or shortages, food security is at risk. Local agroforestry reduces reliance on imports, sustains diverse varieties and genetics, and improves nutrition and livelihood opportunities. Agroforest products also have cultural significance and benefits beyond food production. In addition to the consumption of breadfruit, the wood is used by indigenous communities for construction material, carvings, and canoe building. Many agroforestry species also play key roles in supporting native diversity and ecosystem services, including water quality, erosion reduction, and climate impact mitigation. Agroforestry and home-garden trees are often intensively managed and productive, and a one to three-acre parcel is a significant resource.



TERRITORY OF AMERICAN SAMOA

American Samoa Community College - Agriculture, Community and Natural Resources Division - Forestry Program

Number of permanent forestry staff*: 11

Population: 57,291

Land area: 76.8 sq miles

Acres of forest land: 39,156

Key issues: invasive species, climate change, poor environmental stewardship, land use change

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Commonwealth of Northern Mariana Islands Forestry Department of Lands and Natural Resources

Number of permanent forestry staff*: 7

Population: 69,221

Land area: 183.5 sq miles

Acres of forest land: 60,207

Key issues: erosion affecting the soil, soil and nutrient depletion, water shortage, flooding

FEDERATED STATES OF MICRONESIA

Agriculture and Forestry Unit - Federated States of Micronesia

Number of permanent forestry staff*: 5 (plus collaboration with forestry offices in each of the four states of the FSM)

Population: 106,836

Land area: 271 sq miles

Acres of forest land: 143,249

Key issues: food security, coastal stabilization, biodiversity conservation, watersheds, production and sustainable harvesting of forests, urban and community forestry, and overall capacity building

TERRITORY OF GUAM

Guam Department of Agriculture - Forestry and Soil Resources Division

Number of permanent forestry staff*: 16

Population: 154,805

Land area: 210 sq miles

Acres of forest land: 69,851

Key issues: wildfire and public safety, water quality and water supply, population growth and urbanization, deforestation of native species, urban forests sustainability, degraded lands

STATE OF HAWAI'I

Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife

Number of permanent forestry staff*: 250

Population: 1,360,301

Land area: 6,423 sq miles

Acres of forest land: 1,471,181

Key issues: Forest health including Rapid Ohia Death, sustainable freshwater supplies, biosecurity and invasive species, wildfire, biodiversity, climate change

REPUBLIC OF MARSHALL ISLANDS

Ministry of Resources and Development

Number of permanent forestry staff*: 23

Population: 67,182

Land area: 70.05 sq miles

Acres of forest land: 44,460

Key issues: biodiversity, food security, coastal reinforcement, coastal forests, urbanization, climate change, freshwater resources, capacity-building, invasive plant species, pest and diseases

REPUBLIC OF PALAU

Bureau of Agriculture, Ministry of Natural Resources, Environment and Tourism

Number of permanent forestry staff*: 10

Population: 20,956

Land area: 177 sq miles

Acres of forest land: 102,130

Key issues: climate change, population growth and urbanization, water quantity and quality, wildfire and public safety, conservation and protected areas, sustainable use of forest resources, urban forest sustainability

**The number of permanent forestry staff is approximate and includes professional, technical, clerical, and labor positions. It includes positions supervised by the territorial forester as well as additional positions related to forest and agroforest management.*



FEATURED RESOURCES



Western Forestry Leadership Coalition

<https://www.thewflc.org/committees-networks/pacific-islands-forestry-committee>

USDA Forest Service

<https://www.fs.fed.us/psw/programs/ipif/>

https://www.fs.fed.us/psw/publications/ipif/psw_2020_PartnersInScience.pdf

<https://www.fs.fed.us/research/sustain/sustainability-reports.php#tabs-2>

National Association of State Foresters

<https://stateforesters.org/>

Pacific Fire Exchange

<https://www.pacificfireexchange.org/research-publications/category/2019-wildfire-summary-in-the-western-pacific>

Pacific RISA

<https://www.pacificrisa.org/places/>

Citations for Information Featured in 'Islands At a Glance'

Population (pulled from 2020 S&PF Fact Sheets); Land Area (pulled from Wikipedia); Acres of forest land (pulled from 2020 S&PF Fact Sheets); Key issues (pulled from 2020 S&PF Fact Sheets)



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