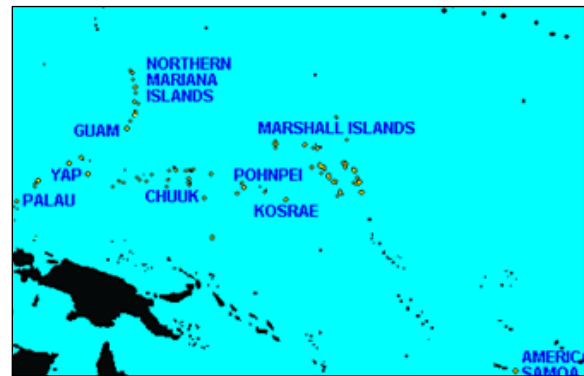


## Threats to Western Private Forests A Western Forestry Leadership Coalition Strategic Initiative

The Threats to Western Private Forests initiative engages diverse stakeholders to explore threats to the health and sustainability of private forests in the western U.S. By having open conversations about the long-term prospects for western forests, we will better understand our challenges and opportunities. This document is a synthesis of feedback from the western Pacific Islands, collected in Palau at the annual Pacific Islands Committee meeting held May 4-8, 2009.

The islands' ability to sustain forested ecosystems and flows of forest products is at risk. Powerful ecological, economic, and social factors have made forestry challenging for many years. With a renewed commitment by the Council of Western State foresters to support forestry capacity in the Pacific Islands, now is the time to understand and to act on the issues of highest priority. Addressing institutional capacity and responding to climate change may be most important to sustaining island forests.



US Pacific Islands

### The islands

Made up of the State of Hawaii, three US territories, and three freely associated states, the western US Pacific Islands are actually a collection of more than 1,000 islands and atolls spread across thousands of miles in the Pacific Ocean and home to more than 1.7 million people. The forest resources on these islands are valued for the ecosystem services they provide (clean and plentiful drinking water, shelter from storms for communities and sensitive coastal ecosystems, etc.), the biological and cultural diversity they support, and research opportunities in tropical ecology they offer as self-contained laboratories. Many islands are strategic locations for maintaining national security and their ecological integrity is critical.

Islands	Total Area (acres)	Existing Forest (acres)	Number of Islands	Population (2006)
Hawaii*	4,110,720	1,490,000	8 with numerous atolls	1,275,000
American Samoa**	49,280	28,686	5	60,000
Commonwealth of the Northern Mariana Islands**	113,280	40,000	14	80,000
Guam**	135,680	65,005	1	170,000
Republic of the Marshall Islands***	44,800	not mapped	5 and 29 atolls	60,000
Federated States of Micronesia *** (Kosrae, Pohnpei, Chuuk, Yap)	149,804	76,527	607	100,000
Republic of Palau ***	114,560	77,241	586	20,000
Totals	4,718,124	153,768+	1,226	1,765,000

\* State    \*\* U.S. Territory    \*\*\* Freely Associated State - Compact Agreement with the United States

## Identifying values and threats - common themes

Building upon the five regional workshops convened to identify the threats to private forests and forestry, WFLC held a listening session in Palau at the annual Pacific Islands Committee meeting and solicited written comments from island foresters. These comments, as well as big ideas from a 2007 white paper entitled *Tropical Forests of the United States - Applying USDA State and Private Forestry Programs* are synthesized here.



PIC members in Palau

In addition to the values emphasized above, western US Pacific Island forests are used to produce forest products, both for subsistence lifestyles and for international export. They support robust tourism and recreation sectors of the economy, as well as the agriculture sector through agroforestry practices.



Agroforestry in American Samoa

Threats to western US Pacific Island forests are numerous and complex, and include development pressure, environmental perturbations, economic dependence, lack of data and institutional capacity, and insufficient policies to support sustainable forestry. Growing populations (both full-time, military, and tourists) on many of the islands are creating competition for scarce land resources and pressure to convert forests to agricultural or urban uses. Environmental perturbations such as tropical storms and invasive species pose short- and long-term threats to forests and are exacerbated by a rapidly changing climate. Economic dependence on the mainland US, lack of capacity and data, and insufficient forestry policies are related economic, social, and policy concerns for the islands. Physical distance, level of development, and access to financial and educational resources all play a role in the lack of capacity in forestry institutions. Distance and a lack of understanding of island issues by US policy makers translate into insufficient policies and regulations that do not fit well with island climates, ecosystems, cultures, and landowner structures.

## Identifying values and threats - differences among the islands

In addition to the concerns held in common across the western US Pacific Islands, island-specific threats and details of common threats were raised during the listening session.

**American Samoa** - With a population of about 69,000 expected to double by 2050, the negative impacts of **rapid population increase** are expected to be decreased water quantity and quality, erosion, impaired food security and nutrition, stressed local economics and urban infrastructure, and conversion of forest land to meet increased housing and food production demands. Institutional capacity amongst forestry and conservation professionals is insufficient to deal with these pressures.

**Commonwealth of the Northern Mariana Islands (CNMI)** - The invasion of non-native terrestrial and marine species - fueled by lack of awareness and education, as well as weak quarantine enforcement - is altering unique and fragile forest, coastal, and marine ecosystems. Shorelines and shoreline vegetation are at intense risk of erosion as sea level continues to rise.



Forest and coastal ecosystems in CNMI

**Federated States of Micronesia (FSM)** - Threats to private forests in FSM are related to one another via socio-economic pressures. A lack of enforcement of forestry laws and regulations allows unsustainable practices (such as slash and burn agriculture) to continue on the islands. Intra-State migration (from the outlying islands to more central islands) is responsible for much of the local population growth and land conversion pressure. Ownership patterns on the islands are diverse, creating a complex environment for conservation. On the islands of Yap and Chuuk, all land is privately owned while on Kosrae and Pohnpei there is a mix of public and private land.



Mangrove and coconut landscape

**Guam** - Wildfire poses a significant threat to forest ecosystems on Guam, creating intense need for restoration and reforestation, particularly following large erosion events on fire-weakened slopes, to cope with downstream impacts to coastal areas and coral reefs. Population growth and agriculture also put stress on forests by leading to conversion of forests to other uses, loss of forest stewardship opportunities, and degradation of water quality. The loss of intact primary forests is critical since the supply is so limited.

**Hawaii** - Conversion and degradation (such as during uncharacteristic wildfire) of Hawaii's upland forests negatively impacts near shore marine resources, as well as inland water quality and quantity. Invasive species - especially feral ungulates, plant species, non-native insects, and introduced disease - are a major threat to native and endemic biodiversity on the Hawaiian islands. **Wild, rural, and urban forests** on each island form a sharp gradient and influence one another, yet many forestry and conservation professionals are unable to work across boundaries. A lack of state and federal funding, as well as a lack of **public understanding and commitment** to environmental issues - and their relationship to core human needs and values - pose fundamental threats to Hawaii's forests and practice of forestry.

**Marshall Islands** - Native forests and agroforestry crops are important for the survival of the Marshallese population as well as the unique atoll ecosystems, all of which are extremely sensitive to **climate change**. Sea level rise and stronger and more frequent storms (heavy winds and sea spray) pose the most significant threat to these systems and could damage basic infrastructure and food security. Lack of education and awareness among the growing population of the importance of atoll

forest ecosystems, and the loss of traditional knowledge pose threats to the all-privately-owned forestland on these islands. At the same time, these private lands are not subject to zoning and growth often proceeds unplanned. The government and the people lack the political will and ability to prioritize on an overwhelming list of problems.

**Palau** - Extreme weather events, drought, wildfire, floods, and landslides pose serious threats to forests and communities in Palau and may worsen with **climate change**. Population growth and urban development threaten island habitat and **biodiversity**, as does the spread of invasive species.



Forestry professionals visit a forest in Hawaii

### Identifying opportunities for success

In addition to identifying threats to private forests in the US Pacific Islands, participants shared many positive ideas and potential solutions to the myriad problems. These opportunities for success included: landscape scale conservation programs (such as the Micronesian Challenge and the Protected Areas Network), Landcare (a community-focused and landowner-based approach to resource management), watershed partnerships (such as the Kosrae & Pohnpei Watershed Alliance Partnership and the Babeldaob Watershed Alliance in Palau), conservation education programs, and integrated economic development and environmental conservation/restoration. Many ideas developed and implemented on the US Pacific Islands will also present workable solutions that can be adapted and used on the mainland and internationally.

**Stronger forest practices policies** guiding timber harvest and other management activities would have positive impacts on water quality and quantity, carbon sequestration and storage, and coastal and marine ecosystems. Stronger building and development or “smart growth” policies that encourage or require consultation with a professional forester would create similar benefits.

Use of the islands as a living laboratory for research on **valuation of ecosystem services** such as filtering pollutants from water and air, carbon storage, and biodiversity in forested, coastal, and marine ecosystems will increase understanding and can serve to elevate the role of island forests in national and international policies and markets.

### Moving forward

The need to **build and sustain technical and financial capacity** among the US Pacific Islands is critical. Education and training for current forestry professionals and agency staff is needed, as well as training for the next generation to fill these positions. Sustaining relationships with Region 5 of the US Forest Service, the Western Forestry Leadership Coalition, Council of Western State Foresters, and National Association of State Foresters will be critical to building and maintaining capacity. **Education**, both formal and informal, for citizens, youth, and decision makers at all levels will create the public understanding and political will necessary to maintain the islands’ forest resources.