



A Guide to the
**Native Ornamental
Trees of
American Samoa**

Edward L. Webb



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The idea of this book and its purpose originated from Dr. Ruth Utzurrum of DMWR, and during the years that it took to produce, she and Dr. Joshua Seamon steered me towards flowering, fruiting, or otherwise interesting specimens to photograph. Essentially all information regarding wildlife use of flowers and fruits was provided by them, based on their many years of experience and research. Ruth and Josh provided enormous logistical support and personal encouragement, allowed me stay with them, supported all my efforts with DMWR, and gave very detailed and useful comments on the manuscript. I am very grateful to them for their help, and I owe them many thanks.

I would like to say *fa'afetai tele lava* to Siafoi Fa'aumu, who has worked closely with me since 1997. Most of the photos in this book were taken in the field with him. He has always put forth his best efforts, rain or shine, and one day at a time. I thank the whole Fa'aumu family for their irreplaceable generosity and friendship over the years.

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Taking publishable photographs of trees was done over a period of many years. And yet in the end, I found significant gaps between what I wanted to publish and what I had acquired. Therefore, many of the photographs have been donated by good colleagues, including Alden Tagarino, Joshua Seamon, Ruth Utzurrum, Art Whistler and Martin van de Bult. I gratefully acknowledge their generosity.

I received logistical assistance from many friends and colleagues. I thank the many staff members of the DMWR office for the years of great support. On Ta'u, James and Meleagi Chapman let me and my scruffy group stay in their home for weeks at a time, and I thank them for so much hospitality.

Thanks are also given to the landowners of American Samoa who allowed me to take photographs of plants on their land. The fine examples of their ornamentals should inspire the rest of us to do the same.

This book is dedicated to my father Clifton R. Webb, Jr.

INTRODUCTION

Ornamental plants have always been very important to people. They are enjoyed by nearly everyone and in almost every corner of the world, and their presence in Polynesian villages was documented by European explorers in the 1700s. Nowadays, with people able to travel around the world, new varieties of ornamental plants have made their way to Samoa, and one can find species from as far away as Africa and South America planted here on the islands.

The global plant trade allows people to appreciate the diversity of plants and to beautify their own homes with new and exotic species from faraway places. One unintended consequence of this, however, is that the ornamental potential of local plants may be overlooked, even though many are beautiful, have cultural significance, and in some cases are not found anywhere else in the world. American Samoa is home to a wide variety of native plants that have excellent ornamental potential, but many people are simply unaware of their existence.

This book is a guide to the native tree species of American Samoa that can be cultivated for ornamental purposes. My focus is on trees that range in size from about 1 meter to over 20 meters in height, but I have also included a few shrubs that have special potential. For each species I highlight the ornamental traits including size, form and color (of the trunk, leaves, crown, etc), ability to produce shade, flower and fruit characteristics (size, color, scent, etc), and attractiveness to native birds and bats. Some of the trees are already in use, both in American Samoa and across the South Pacific; others have never been considered but are ones that I believe should be tested.

Why focus only on Samoan species? Why not promote any tropical ornamental? There are several reasons. First is that there is enormous, untapped potential in American Samoa. New discoveries await in the forests of Tutuila and Manu'a, which hold dozens of unique species that are just as beautiful as imported varieties. It is amazing to realize that right outside your doorstep, in the tropical rainforest, there live many plants waiting to be discovered! All that is needed are people to collect seeds, plant and take care of them, and see what happens. Secondly, planting native species helps to preserve native Samoan plants and animals. Some of the plant species in this book are uncommon or rare, and some are found nowhere else in the world! Planting them on your land will help the species survive by increasing the population numbers. Planting native trees also helps populations of native Samoan wildlife, such as the pe'a, lupe, manuma and manutagi, which get nourishment from the flowers and fruits of many native species. Since Polynesians arrived to Samoa nearly 3000 years ago, many of the bird species have disappeared. By planting trees that provide food for birds and bats, you can help sustain those that remain. Third, planting native trees can help you pass on traditional Samoan knowledge and culture to your children. Every plant species in the forest has its own story to tell about where it grows best, what animals visit it, and how Samoans have used it for thousands of years. Unfortunately, much of this information is being lost. But we can fight the loss of knowledge by planting native trees, learning each species' story, and teaching it to our children. Finally, planting native species helps avoid the importation of exotic plants that could invade Samoan forests. For example, the rainforest of Tahiti is being conquered by an alien species (*Miconia calvescens*) that was brought in to be an ornamental. In American Samoa, there are several non-Samoan tree species that threaten forests, such as lopa (*Adenanthera pavonina*) and pulu mamoe (*Castilla elastica*). Luckily, however, the forests of Tutuila and Manu'a are largely pest-free. But by planting native trees, you might be protecting American Samoa's forests from possible invasion by unwanted, alien species!

There are government agencies that can help you learn more about native plant species that could serve as ornamentals. The Land Grant office propagates seedlings of many tree

species for distribution. If the demand for native tree seedlings increases, then hopefully the Land Grant will respond by increasing the number of native species they propagate. So, do not hesitate to make your voice heard! The Department of Marine and Wildlife has several scientists who can discuss the ecology and life history of the native plants and wildlife, so that you can get a better idea of what animals you might attract with particular trees.

PLANTING TIPS

The vast majority of ornamentals found in a garden or near a house have been planted. A yard with a wide diversity of species, planted in an artistic manner, commands attention from passers-by and neighbors. It will also enhance your own quality of life. Humans have an intimate connection to the land and to biological diversity, and a diverse garden of native plants that attract the native wildlife is far more preferable to a drab, uninteresting yard.

Creating a beautiful landscape of native trees and shrubs can be done by anyone with the desire to pursue his or her own artistic vision. You can plant trees and shrubs to reflect your family's taste and interests, and to attract as much wildlife as you desire! There is no limit to your own creativity and potential: you can create a yard that might look like a well-manicured garden, a forest, or something in between.

One of the most important ways to maximize your enjoyment is to find a balance between the number of species and the number of individuals per species you plant. If you plant many individuals of only one or two species, then the diversity of your garden will not be very high. But when that species has flowers and fruits, you can be sure to have a spectacular garden with lots of flowers and fruits, visited by many birds and bats. On the other hand, if you plant a wide variety species but only one tree for each, then you might get flowering and fruiting over most of the year, but with only a few trees at a time. Most people find the best option to be somewhere between these two extremes, and I encourage you to explore the endless combinations of tree diversity and abundance.

It is also worthwhile to decide what particular functions you want each tree to perform. This can help you decide what species to plant. Try asking yourself and your family some of these questions: Does our land need a large shade tree as the focal point of the yard, to sit under or to have a barbecue under? Do we need a small tree that will provide shade to a fale? Do we want to have a species with fragrant flowers near our house? Do we want to plant a tree that will attract wildlife, like segasegamau'u, lupe, manutagi or pe'a? Do we want to plant a rare species, or a species that is only found in Samoa? Asking yourself what you want out of a particular tree or shrub will help you decide what species you might want to plant. This guide is designed to help you decide what particular species might suit your needs.

Finally, you should consider the stature of the plant when deciding what species to choose and where it should be located in the yard. It is often very difficult to envision what a tree might look like 10 or 20 years in the future. But generally, large trees should be planted away from the house, whereas medium and small-sized trees can be planted closer to houses and fales.

PRESERVING EXISTING TREES IS IMPORTANT

While most ornamental trees are deliberately planted by the landowner, in American Samoa there is a great opportunity to preserve existing trees that grow naturally on the land. During traditional cultivation practices, land is cleared for plantations of taro, ta'amu, ulu, and other agricultural crops. The practice of clearing land, although considered a Samoan tradition, can be very harmful to the land if it is done in a careless manner. Soil can erode rapidly, and the

forest will not regenerate very quickly if invasive species such as fue saina (*Mikania micrantha*) or fua pepe (*Leucaena leucocephala*) become established. Also, developing land for building a new house or another structure usually requires clearing the land. But is it really necessary to cut down every tree on a piece of land? No, it is not! In fact, you can benefit from preserving trees on your land. This is an important way to protect the soil and to benefit wildlife at the same time. Trees produce shade, which can reduce invasion by unwanted weeds. Preserving native trees will benefit birds and bats by providing food for them. Scientists have shown that even a single tree in an agricultural field can attract wildlife if it produces fruits or flowers attractive to animals! By attracting wildlife to those protected trees, new seeds from the forest will also be brought in, thereby assisting natural forest regeneration after agriculture has finished. You can help conserve Samoan plants and wildlife by protecting important Samoan tree species on your land and in your plantations. **Preserving trees means to not cut them down and to protect them from being cut down by other people.**

One sad example of why trees should be preserved is in Tafuna, where once there was a huge, magnificent asi tree in a large planter near the roadside (see the photo of *Syzygium inophylloides*). The tree in that photo is no longer there because it was cut down. You can see how this incredible specimen beautified the roadside and invited respect. When that tree was flowering, it was busy with native bird species. Now, with that massive asi tree gone, the location is no longer visited by the iao or segasegamau'u. It is a tragedy that we can prevent if we preserve long-standing trees on land.

Similarly, the large aoa (*Ficus prolixa*) trees that have towered over the Tafuna plains for generations have become rarities due to habitat loss and people burning trash at the base of the tree. The aoa tree is perhaps the most important species to a broad range of fruit-eating animals such as the lupe, manuma, manutagi and pe'a. **By killing aoa trees we are therefore affecting the wildlife as well!** But by protecting and planting the aoa, we can help to sustain the diversity of wildlife on the islands. Please help to preserve the populations of native trees, and plant them whenever and wherever you can.

It is important to consider each tree on your land and decide if it has to be cut down, or if it can be preserved and continue to provide ecological services to you and your community. You can make a difference by preserving trees on your land.

ORGANIZATION OF THIS BOOK

On the next page you will find the list of Samoan trees and the page numbers where they can be found. After the table are the species descriptions, which include photographs and text describing their unique features. The species are presented alphabetically by scientific name. This was done because some trees do not have Samoan names, but all have scientific names. I hope you will enjoy browsing through and find many interesting ornamentals.

At the end of the book is a series of tables to help you determine the best species for your garden. The tables are listed according to specific features you might want: size, shade, leaf traits, flowers and fruits, attraction of wildlife, whether the species is rare, or other 'special uses'. Each table lists what I consider to be the 'best' species for each category. These tables reflect my opinion, which I try to articulate for each species.

I encourage you to experiment by planting many different types of native Samoan species. There are so many potential ornamental species of trees and shrubs that you can spend your whole life learning and planting only native species. Not only will you be able to pass on this knowledge to your children and grandchildren, but your home will be more beautiful too.

Tree species listed by Samoan name. Where a Samoan name refers to more than one species, the number of species discussed in this book is given in parentheses after the genus. Species that have no Samoan name are at the end of the table.

Name	Species	Page	Name	Species	Page
A'amati'e	<i>Elaeocarpus</i> sp. (2)	24	Mati	<i>Ficus</i> sp. (3 small)	28-29
Afa	<i>Neonauclea forsteri</i>	46	Milo	<i>Thespesia populnea</i>	38
Ala'a	<i>Planchonella garberi</i>	49	Moso'oi	<i>Cananga odorata</i>	16
Ala'alatoa	<i>Leukosyke corymbulosa</i>	42	O'a	<i>Bischofia javanica</i>	11
Aoa	<i>Ficus</i> sp. (2 large)	30-31	Olioli	<i>Cyathea</i> sp. (2)	20
Asi	<i>Syzygium inophylloides</i>	58	Pipi	<i>Hernandia moerenhoutiana</i>	36
Asi vai	<i>Syzygium clusiifolium</i>	57	Pu'a	<i>Hernandia nymphaeifolia</i>	37
Falaga	<i>Barringtonia samoensis</i>	10	Pualulu	<i>Fagraea berteriana</i>	27
Fana'io	<i>Sterculia fanaiho</i>	56	Puapua	<i>Guettarda speciosa</i>	35
Fau	<i>Hibiscus tiliaceus</i>	38	Soga	<i>Pipturus argenteus</i>	48
Fena vao	<i>Syzygium samoense</i>	59	Talafalu	<i>Micromelum minutum</i>	45
Fetau	<i>Calophyllum inophyllum</i>	14	Talie	<i>Terminalia</i> sp. (2)	60, 62
Filimoto	<i>Flacourtia rukam</i>	32	Tamanu	<i>Calophyllum neo-ebudicum</i>	15
Fua lole	<i>Melastoma denticulatum</i>	44	Taputo'i	<i>Elattostachys falcata</i>	25
Fu'afu'a	<i>Kleinhovia hospita</i>	41	Tauanave	<i>Cordia subcordata</i>	19
Futu	<i>Barringtonia asiatica</i>	9	Tausuni	<i>Tournefortia argentea</i>	63
Gasu	<i>Palaquium stehlinii</i>	47	Tava	<i>Pometia pinnata</i>	51
Gatae	<i>Erythrina variegata</i>	26	Tavai	<i>Rhus taitensis</i>	52
Ifi	<i>Inocarpus fagifer</i>	39	Togo	<i>Rhizophora</i> and <i>Bruguiera</i>	12
Ifilele	<i>Intsia bijuga</i>	40	Toi	<i>Alphitonia zizyphoides</i>	7
Laga'ali	<i>Aglaia samoensis</i>	6	To'ito'i	<i>Scaevola taccada</i>	54
Laupata	<i>Macaranga</i> sp. (2)	43	U'unu	<i>Sarcopygme pacifica</i>	53
Leva	<i>Cerbera manghas</i>	18	Vivao	<i>Garuga floribunda</i>	33
Malili	<i>Terminalia richii</i>	61		<i>Astronidium navigatorum</i>	8
Mamala	<i>Dysoxylum samoense</i>	23		<i>Buchanania merillii</i>	13
Mamalava	<i>Planchonella samoensis</i>	50		<i>Casearia samoensis</i>	17
Mao'o'sina	<i>Trichospermum richii</i>	64		<i>Cyrtandra</i> sp. (2)	21
Maota	<i>Dysoxylum maota</i>	22		<i>Sophora tomentosa</i>	55
Masame	<i>Glochidion ramiflorum</i>	34			

Species Descriptions



A. Tagarino / DMWR



Aglaia samoensis
Laga'ali

Laga'ali is only found in the Samoan islands and therefore has special importance as an ornamental. It is a small tree usually less than 5 m height, found in undisturbed lowland forest. If it is grown in moderate light levels, it produces a nice dense crown of leaves and flowers. The greatest ornamental feature of laga'ali is the flower, which is small, cream colored and highly fragrant. These flowers have been used for generations by Samoans to scent coconut oil. Laga'ali fruits are small brown spheres that split open to reveal one or a few seeds. The fruits are probably eaten by birds such as fuia, and possibly lupe. In fact, in the forest, it is difficult to find open fruits that have the seeds; laga'ali is a very popular food for wildlife.

Laga'ali could be planted near the house or fale, where the fragrance could be smelled in the home, or it could be planted in groups as part of a hedge, where the fragrance could be quite noticeable from a distance. Perhaps the best place to plant laga'ali would be near doorways and windows in order to maximize the enjoyment of the flowers. The trees may attract fuia and lupe. Laga'ali probably requires moderate light levels.



Alphitonia zizyphoides

Toi

Toi is a large tree that can easily reach 20 m height with a wide but open crown. It is usually found in forest that is regenerating after a disturbance or cultivation. The trunk is straight, with smooth gray bark. The leaves are bright green above, with a light gray tint below and very short brown hairs on the leaf stalk. When the wind blows the leaves, the contrasting colors of the upper and lower parts of the leaves are highly visible and beautiful. The flowers are small and white, and produced in large quantities at the ends of the branches. They are visited by iao, and both species of pe'a. The fruits are dark purple spheres that contrast with the bright green to silvery tones of the leaves. They are eaten by lupe and probably miti vao. Although toi can grow very large, I have seen beautifully shaped small and medium-sized trees.

Toi is a great choice as a stand-alone tree in an open yard, planted at a good distance from the house. It should grow well in an open area.



Astronidium navigatorum

Astronidium navigatorum is found only in Samoa, yet has no Samoan name. It is a shrub or a small tree normally found at elevations above 200 m. The leaves have three primary veins arising from the base, with secondary veins intersecting the primary veins at nearly right angles, producing a square pattern on the leaf blade. The leaf stalk is purple. The white flowers have the shape of a five-pointed star and are found in dense clusters at the ends of the branches.

Astronidium has beautiful foliage and flowers. Nothing is known about how it would respond to pruning. If it can be grown at lower elevations it would make an interesting addition to a garden. It could definitely be planted in the higher elevation villages on Tutuila. This species could be planted virtually anywhere in the homestead: near the house to add texture and diversity, as part of a hedge, or simply as a stand-alone tree. It would grow best in a sunny location.



Barringtonia asiatica
Futu

Futu is common near the coastline. In some villages it is already used as an ornamental. Futu is usually less than 10 m tall, but it has a dense crown of large, shiny dark green leaves that produces excellent shade. When pruned properly, futu has a symmetrical, rounded crown. The flowers are large and white with many pink and white stamens with yellow tips. The fragrant flowers attract pe'a, which visit the trees at night. The green fruits are large, several inches across, and with four sides. In the old days, the seed would be ground up and used as a fish poison on the reefs.

Futu is an excellent choice for someone wanting a medium-sized, densely-crowned tree. It grows slowly so patience is required, but it produces excellent shade when it is mature. The tree could be planted anywhere since it does not get very tall. The flowers will attract pe'a so this is an excellent species to help conserve wildlife. It should withstand cyclones quite well. Because much of the coastal area in American Samoa is being developed, existing trees should be preserved wherever possible. To see an excellent specimen of futu, visit Lion's Park in Tafuna, where the photograph above was taken.



Barringtonia samoensis
Falaga

Falaga is a small or medium-sized tree usually less than 10 m height, found in moist areas near streams. The leaves are large and clustered at the ends of the branches, but the crown is open and does not provide much shade. Each tree usually has several bright red leaves in the crown, adding contrast to the greenery of the other leaves. The ornate flowers are 1-2 inches across with a small white calyx and many bright red filaments. The flowers are found in long, delicate, hanging clusters, a unique flower arrangement in American Samoa. The flowers are probably visited by iao, segasegamau'u and pe'a. The fruits are large and somewhat spherical, with a deep red color when ripe.

Falaga could be an excellent ornamental for wet or swampy areas, but it probably could be planted in drier areas too. In fact, I have seen small *Barringtonia* trees planted along the roadside in Singapore. My suggestion would be to plant this tree in a group with other trees that have fuller crowns, because falaga does not have a dense enough crown to make it a good stand-alone tree. The beauty of the flowers will make an excellent complement to other tree species.



Bischofia javanica

'O'a

The 'o'a tree is well known throughout Samoa as both an ornamental and culturally important tree. 'O'a can achieve a very large size with a wide trunk and a beautiful, full crown that provides a lot of shade. The bark is brown and flaky. The leaves are compound and consist of three leaflets with toothed edges. New leaves are light green and older leaves are dark green, making a beautiful contrast. The fruits are small orange to brown spheres and produced in large bunches every year. The fruits are eaten by lupe, manutagi and fuia. 'O'a grows fast in open light, so the species can quickly become a large tree.

'O'a can already be found as a stand-alone tree at many houses across American Samoa, and this species is an excellent choice for open areas where shade is desired. The tree is best planted alone, like in the photos above, so that the beauty of its trunk, crown and fruits can be appreciated. This species recovers from cyclones quickly.



R. samoensis



B. gymnorrhiza



R. samoensis



B. gymnorrhiza

***Bruguiera gymnorrhiza* and *Rhizophora samoensis* Togo**

These are the two main mangrove species of American Samoa that live in swampy coastal mudflats flooded by high tides. Togo is found in Pala Lagoon, Leone, Vatia and Aunu'u, with smaller populations in a few other locations on the northern coast of Tutuila. The two species here are quite different but they have the same Samoan name. Both species are usually medium-sized trees, but they can grow large under the proper conditions. Both species have straight trunks, but *Rhizophora* has additional structures called stilt roots, which are beautiful arching structures that extend out from the trunk, provide stability to the tree and help it breathe! During high tide the stilt roots provide shelter for many marine creatures, such as juvenile fish, crabs and mollusks. *Bruguiera* leaves are thick and leathery, and produce a compact, dense crown. The flowers of *B. gymnorrhiza* have a bright red or pink calyx, and are visited by iao and segasegamau'u. The fruit is several inches long and looks like a cigar, but is actually a germinated seed! *Rhizophora* flowers are yellow and the fruit is similar to but smaller than *Bruguiera*. Mangroves are the only trees in the world where the seeds germinate while still on the tree.

Although togo is found in tidal mudflats, they can grow in upland soils as long as there is sufficient water. So, you can plant togo in your homegarden, and with proper care it will survive. However, togo will not survive on sandy beaches where there are waves. In Pala Lagoon, togo populations are in danger because of cutting. This could have serious impacts on the health of the Pala lagoon ecosystem. Mangroves need protection because many marine species depend on them.



Buchanania merillii

Buchanania is a large forest tree found only on the Samoan islands. It has no Samoan name. It is fairly common on Tutuila but largely absent from Manu'a. It can reach heights over 25 m, with a wide, dense crown. It has a straight trunk with smooth bark. *Buchanania* has long, shiny, dark green leaves clustered near the ends of the branches, with long leaf stalks, giving it very interesting foliage properties. It has small white flowers. The fruits are compressed spheres, purple when ripe, and are an important food for lupe and manutagi.

Buchanania is a large tree and therefore should not be planted close to a house. It would do well as a stand-alone tree, planted in a row near the edge of a property line, next to the road, or in groups with other trees. One of the primary reasons to plant *Buchanania* would be to attract lupe and manutagi when the trees have fruit.



Calophyllum inophyllum
Fetau

Fetau is a common coastal tree that can grow up to 15 m height, with a thick trunk and a dense crown of leaves that produces excellent shade. However, fetau can also be a beautifully sculpted medium-sized tree (see photo above). The trunk may have deep vertical cracks in the bark that provide interesting texture. The leaves are long, thick and leathery, shiny and dark green above, and lighter green below. The leaf stalk and the midvein of each leaf is a beautiful bright yellow, and the leaves have straight and tightly packed parallel secondary veins. Overall, these are some of the most beautiful and richly textured leaves in American Samoa. The flowers are magnificent and produced in abundance along the branches. They are about 1-2 inches across and have open white petals with many bright yellow filaments in a circular pattern. The flowers are visited by iao, segasegamau'u and pe'a. The fruits are medium-sized, light green to purple spheres that hang in attractive clusters. The fruits are eaten regularly by both species of pe'a, particularly pe'a fanua.

Fetau is an excellent candidate for ornamental planting. Although in American Samoa it is common near the coast, it can be planted far away from the shoreline, too. It can easily be a stand-alone tree, both near the house or along the roadside. Fetau species grows slowly, so wherever possible existing trees should be preserved.



Calophyllum neo-ebudicum
Tamanu

Tamanu is a medium-sized to large tree that can grow to more than 20 m height, with a fairly narrow crown that produces good shade. The bark may have vertical cracks, with beautiful tints of golden yellow or orange particularly on young trees. The leaves are shiny, deep green and with a bright yellow, thick midvein and closely packed straight secondary venation. New leaves are a bright, deep red color that makes the crown exceptionally beautiful during leaf flushes. The flowers are white or pinkish with yellow filaments (similar to fetau); they are visited by iao, lupe and pe'a. Mature fruits are green to purple spheres about 1-2 inches across, and found in clusters. Lupe eat tamanu fruit.

In contrast to its sister species fetau, I have never seen tamanu planted as an ornamental. However, I suspect that this species would make an excellent addition to a garden. The variety of textures and colors provided by the bark, leaves, flowers and fruits make it a unique species. It could be planted alone so that its bark and leaf features could be appreciated. Similar to fetau, tamanu is a slow-growing species so existing trees should be preserved wherever possible.



Cananga odorata
Moso'oi

Moso'oi is planted all across Polynesia and has a long cultural heritage in Samoa. It is a fast-growing, medium-sized tree with a fairly open crown. The trunk is straight with smooth gray bark. The long, slender branches are well spaced along the trunk and often hang downward with drooping leaves. The flowers are large and bright yellow with six long petals, and found in clusters along the branches. They are perhaps the most intensely scented flowers in all of Polynesia, and can be smelled from long distances. They are bold and sweetly fragrant, and are used in Samoa to scent coconut oil. Flowers are visited by iao and pe'a. The fruits are found in small clusters, and are smooth elongated spheres that are green when immature, and turning purple when ripe. Lupe and manutagi love to eat these fruits. Anyone who plants this species should have visits from birds and bats.

Moso'oi should be planted in open areas, where everyone can enjoy its unique growth form and beautiful, fragrant flowers. It grows fast, so trees will begin producing flowers within a few years. Perhaps the best location to plant moso'oi would be near a roadside or walking path, where the fragrance could be enjoyed by both residents and passers-by.



Casearia samoensis

Casearia samoensis was only recently described as a new species to science, and is found only in the Samoan islands. As a result, it has important scientific value for American Samoa. *Casearia* is a small to medium-sized tree with an open, sparse canopy of medium-sized shiny leaves. The flowers are small and white, found in small clusters along the branch. The fruits are yellow when ripe and they split open to reveal numerous small black seeds embedded in an orange to red pulp. This pulp is very tasty to birds, because in the forest it is almost impossible to find open fruits with seeds and pulp inside. *Fuia* are most likely the birds that eat *Casearia* fruits.

Casearia has never been planted as an ornamental, so I recommend that you experiment with it. Although it has a sparse branching pattern when growing in the forest, it might have thick foliage and many flowers if grown in higher light. Overall, *Casearia* could be one of the better small tree ornamental trees on the islands. It should be planted near a house or a fale, either alone or in combination with small shrubs or taller trees. The fruits should attract a variety of fruit-eating birds. This is a high priority ornamental.



A. Tagarino / DMWR



Cerbera manghas **Leva**

Leva is coastal tree that is planted in many tropical countries as an ornamental, but it is not very common in American Samoan villages. Interestingly, I have found leva at old village sites in the forest, indicating that it was used as an ornamental in the past. This practice should be revived because leva has fantastic ornamental properties. The trees are usually about 5-10 m tall, with long, narrow leaves in a crown that produces light shade. The flowers are bright white, with flaring petals and a red margin surrounding the opening to the long narrow tube. The fruits are about four inches long and ellipsoid, turning deep red when mature.

Leva can grow in a wide variety of soil conditions, so it has excellent potential to be planted widely in American Samoa. This medium-sized tree has a growth form that can be used with many different planting strategies. It would provide a lovely accent next to a house or fale. It could be planted away from the house, either standing alone or in / next to a hedge in association with taller trees and shorter shrubs. It could be planted along the roadside, similar to the way people plant the non-Samoan pua fiti (*Plumeria rubra*). This is a versatile species that should be widely promoted. Revival of leva as a native ornamental should be a priority!



Cordia subcordata
Tauanave

Tauanave is usually found near sandy shores and in coastal forests. In some parts of Asia and the Pacific, it is already planted as an ornamental and pruned to emphasize its naturally beautiful form. It is usually a small to medium-sized tree, but it can become a large tree if left alone under the right growing conditions. The leaves are broad and a shiny, ranging from light to dark green. The flowers are about 2 inches across and bright orange, usually produced singularly or in small clusters. The fruits are spherical, and usually dark when they are mature.

In my opinion, this is one of the highest priority ornamental trees in American Samoa. It is an excellent coastal species that could be planted along the roadside. It can be planted near the house or fale, where the fantastic orange flowers will accent any structure and it will produce excellent shade without becoming a danger to the structure. Tauanave should be planted in open light conditions.



***Cyathea* species
Olioli**

Olioli is one of the most unique ornamental species of American Samoa. As a fern it is part of an ancient group of plants that do not have flowers. Instead, they reproduce using spores. Ferns were one of the dominant plant groups during the time of the dinosaurs more than 100 million years ago! Now, across American Samoa, tree ferns can be found as common residents in the hill and montane rainforests. Olioli is a type of tree fern, which can grow to over 5 m tall in open conditions. It has stunning large, feathery fronds clustered at the top of a dark brown or black, fibrous stem. New fronds uncurl from the top of the stem in a structure called a fiddlehead.

Tree ferns are already used as ornamentals throughout much of the world, adding complexity to the landscape. The vegetative features of olioli make it essential planting for anyone who is serious in having a structurally diverse garden. Its greatest ornamental features are the large, feathery fronds. Tree ferns should not be planted as stand-alone trees, because they will never produce flowers, and are therefore probably best considered as accent species. They are tall enough to be the upper layer in a multi-layer garden. I do not know how easily this species can be propagated; research should be initiated on the Samoan species.



Cyrtandra species

Cyrtandra is a group of shrubs that can be found across all elevations of American Samoa. There are several species of *Cyrtandra*, and the two with the most ornamental potential are *C. samoensis* and *C. longipedunculata*. *C. samoensis* is a small shrub that tends to grow on steep rocky slopes. It is an unbranching shrub with large, usually shiny leaves. The flowers are small, white or pale yellow and found in dense clusters at the base of the leaves. The fruits are orange berries that are probably eaten by small birds. You can find excellent examples of this species along the road to the Afono ridge, and along the early sections of the Alava Ridge road in the National Park. *C. longipedunculata* is normally found in higher elevation forests, above 250 m elevation. However, it would be worthwhile to try and plant this species at lower elevations because it has very showy white flowers with excellent ornamental potential. *C. longipedunculata* has smaller leaves, but much more showy flowers, than *C. samoensis*.

C. samoensis could be planted directly next to a house or fale, or beneath one of the shade tree species listed in this guide. It probably requires partial shade and sufficient moisture. *C. longipedunculata* seems to be found in brightly lit areas, but this needs more observation and experimentation. I believe that both species could be integrated into hedges or in planting arrangements with other shrubs. They should not be planted as stand-alone plants.



Dysoxylum maota
Maota

Maota is a large, fast growing tree that can reach 25 m height or more with a large, dense crown that provides good shade. The species prefers open conditions, and it can be planted almost anywhere. The trunk can be heavily buttressed and thick. The leaves are compound, with many long leaflets that hang downward off of the stalks. This vegetative feature distinguishes it from the closely related species mamala (next page). The flowers are small, white or pale yellow in color and hang in long clusters at the ends of the branches. Flowers are visited by the pe'a and several bird species. The fruit is about 1 inch across, light brown to yellow-brown, somewhat spherical but with flattened sides. They hang in long clusters and are a very attractive feature of the tree. The fruits split open in four parts to reveal one bright red seed in each cell. Lupe, fuia and miti vao eat the seeds.

Because it is a large fast growing tree, maota should be planted in a large open area and given plenty of room to grow. It should not be planted near the house or near electrical wires because of its fast growth rate and tall stature. It could be planted as a stand-alone tree, or as the largest tree in a cluster of variable-height trees and shrubs. Maota is commonly found in forest regenerating after disturbance or clearing; therefore preserving it is a way to have a fast-growing, wildlife-attracting species on plantation land or cleared land.



Dysoxylum samoense
Mamala

Mamala is one of the most common native trees in American Samoa, found in almost every forest habitat. It is a sister species to maota, and like maota it is a large fast-growing tree that can reach 25 m height with a large, spreading crown and a thick trunk. Mamala has compound leaves with long leaflets, but unlike maota the leaflets do not hang downward. The flowers are small, white or yellow, and lightly fragrant. They are visited by pe'a and several bird species. The fruit is a light brown sphere about 1½ inches across that splits into four quarters revealing one bright red seed per chamber. The fruits are important components of the diet of lupe, fuia and miti vao.

Due to its fast growth, good shade-bearing properties, and wildlife use, mamala looks great as a stand-alone tree or in combination with shrubs, near hedges, or in association with slower-growing trees. It could also be planted near a maota tree, where the differences between the two species could be appreciated. Mamala can be found in regenerating forest, and existing trees should be preserved when possible.



Elaeocarpus ulianus
A'amati'e

A'amati'e is a medium to large tree, usually found in relatively undisturbed hill forest. It has a somewhat narrow, densely foliated crown providing good shade. The leaves are broad with toothed margins and a tapering tip. Scattered within the crown are red leaves that have changed color before falling to the ground. The flower of a'amati'e is spectacular: delicate, less than one inch across, white, and in the shape of a small, downward hanging bell with a fringed edge. Pe'a, lupe, iao and possibly segasegamau'u regularly visit these flowers. The egg-shaped fruits are about 3 inches long, light green and smooth. The fruits are popular with both species of pe'a and lupe. The a'amati'e seed is flattened with wavy edges; it could have potential for use in handicrafts.

A'amati is probably not a fast growing species, so it should be preserved whenever possible. It should be planted away from the house and can hold interest as a stand-alone tree or with other plants. The leaves and flowers are exceptional features of a'amati'e, so it should be planted and cared for to maximize enjoyment of these features. If the tree could be pruned to remain small, it could be grown near the house where the leaves and flowers could be enjoyed more easily. A closely related species of a'amati'e, *E. floridanus*, also has beautifully shaped flowers. The fruits of *E. floridanus* are smaller and purple. The leaves have a very beautiful orientation but lack teeth on the edges. It should be preserved as well.



Elattostachys falcata
Taputo'i

Taputo'i is a medium to large rainforest tree with compound leaves in a dense crown. The leaflets are long, somewhat narrow and slightly curved. The flowers are small and red, and produced in long bunches. When trees flower, they look very striking because the crown becomes red, owing to the great number of flower spikes produced. Flowering trees can be seen from a long distance. Small to medium-sized taputo'i trees can produce flowers. The fruits are somewhat angular, light green to brown in color, and about one inch in diameter. They break into three sections revealing one shiny black seed per section. The seeds of taputo'i are eaten by fuia, miti vao and lupe.

Very little is known about the growth requirements of taputo'i, but because it is found in natural, less-disturbed forest, I suspect that it would probably require partial shade for maximum health. The tree can become large, so it should be planted at a distance from the house.



Erythrina variegata
Gatae

Gatae is a large coastal tree that can have a spreading crown and a thick trunk. Trunks of gatae trees may have blunt 'spikes' and vertical 'striping', giving them a unique bark pattern. The leaves are alternate and compound, with three large, almost circular leaflets with pointed tips. Some varieties of gatae have bright yellow streaking in the leaves, making them particularly attractive. Lupe have occasionally been seen eating young leaves of this species. Gatae loses its leaves when it produces flowers. While this is not good for shade production, the flowers are awesome: bright red and found in dense clusters at the ends of branches. The leafless branches are therefore highlighted by the flamboyant red flowers, which are favored by iao, segasegamau'u and pe'a. The fruits are dark brown to black, curved, narrow pods.

Because gatae has such a large trunk and a broad crown, it should be given plenty of room to grow and should be planted well away from any structures. As shown in the photograph above (taken in Lion's Park, Tafuna), the magnificent red flowers and massive size make gatae an excellent stand-alone tree. A recent threat to the gatae tree is a gall-producing wasp, which kills the trees. In fact, the two beautiful gatae trees pictured above died. So, we should preserve and replant this species wherever possible.



A. Tagarino / DMWR



J. Seamon / DMWR



Fagraea berteriana
Pualulu

Pualulu is a small native forest tree that is found across a wide elevational range. It is very common at the top of the Afono Pass. Pualulu is used as an ornamental in some places in the Pacific, but surprisingly I have rarely seen it as an ornamental in American Samoa. It can grow as a free-standing tree, or it can use another tree as structural support. It could be pruned and maintained in nearly any growth form desired. The leaves are broad, rounded, and thick. The flowers are long and tubular, colored white or yellow, and very fragrant. These flowers could be added to Samoan *ulas* to add a beautiful scent. Given the shape of the flowers, they must be visited by long-tongued insects, but perhaps they are also visited by iao and segasegamau'u. The fruit is medium-sized, orange and shaped like a small egg. The fruits hang in clusters. They are eaten by fuia and pe'a. Fuia goes crazy for pualulu fruits!

Owing to its flexible growth form, the fragrant and beautiful flowers, and the large orange fruits that attract wildlife, pualulu is one of the best native ornamentals in American Samoa. It could be planted close to the house, or at a distance as a free-standing tree integrated with other plants. It could be pruned to have excellent form. It could be planted near footpaths or the road so that passers-by could enjoy the flowers. This species is very versatile and can fulfill a wide variety of ornamental needs.



tinctoria



F. tinctoria

***Ficus godeffroyii*, *Ficus tinctoria*, *Ficus uniauriculata*
Mati**

Mati is the Samoan name for four types of small to medium-sized fig trees. Three species of mati have good ornamental traits (*F. scabra* is not recommended as an ornamental). *F. tinctoria* has the best ornamental traits. It can grow as a stand-alone tree, or it can grow using another tree as support. It is usually only a few meters tall, but it has a dense, broad crown that produces excellent shade. The leaves are thick and glossy and range in color from dark green to yellow, depending on the growing conditions. The species is very hearty and can grow in rocky or clay soil. The spherical fruits are about one inch across, and can be yellow, orange or red. Fruits of all colors can usually be found on a single tree, thereby making mati a very colorful species. Many species of wildlife may visit this species, especially fua, manutagi and pe'a.



F. godeffroyii is quite similar to *F. tinctoria* in many respects, but my experience is that the crown is not as full as *F. tinctoria*. *F. uniauriculata* has a large leaf with an uneven base that looks like an earlobe. The fruits of *F. uniauriculata* are the largest of the mati species.

Of the four mati species, *F. tinctoria* is in my opinion the best ornamental and should be heavily promoted. It can be pruned as a shrub or a tree. It can be planted next to a house or fale, where it would be a fantastic shade-producing tree. It would also complement hedges and would be an excellent species to plant beneath (or on!) large trees.

The other two ornamental mati species will serve a variety of purposes depending on your need. There is a lot to discover with these beautiful and wildlife-attracting figs. You should experiment with the different species of mati to see which ones you prefer at your home.



Ficus obliqua* and *F. prolixa **Aoa**

Aoa is one of the giants of the rainforest, distributed widely across all of American Samoa. The largest aoa trees can be found on the Tafuna Plain, where they once towered over the Tafuna rainforest. Sadly, only scattered trees remain across the Tafuna Plain, with some trees still residing in the remnant forest patch in Ottoville. Aoa can still be found in less-disturbed forests of the hills. Aoa can reach more than 30 m in height, owing to a fast growth rate that allows it to achieve large sizes relatively quickly. The trunk of *F. obliqua* can be massive, and the crown of mature adults spreads very broadly and is densely foliated with small, dark green, stiff, leathery leaves that cast excellent shade. As the photo on the next page shows, even small aoa trees can have beautiful form and excellent shade properties. *F. obliqua* fruits are small, bright red to orange figs that are visible from a distance and contrast beautifully with the dark green foliage. *F. obliqua* can be pruned to keep it as a small to medium sized tree.

F. prolixa is also an excellent ornamental species. Its main characteristics are unique trunk shape, shade-producing crown and importance to wildlife. Both the pe'a and many bird species are highly attracted to *F. prolixa*. Aoa is used as a roosting and nesting site for several species of birds such as lulu (owls) and seabirds.

Aoa fruits are important for many species birds such as the manuma, fuia, manutagi, and occasionally lupe. Manuma, the rarest and perhaps most beautiful of the fruit doves, highly favors aoa fruits. Because it can be a giant tree and is so important to wildlife, it should be preserved in nature and on your land whenever possible. With that in mind, the practice of burning trash at the base of the aoa tree should be stopped.

Aoa can be planted near the house as long as it is pruned regularly to keep it at a manageable size. However, the best placement for the tree would be in the open, away from the house, where it can grow to be a large tree and produce large fruit crops. This would maximize the visitation of wildlife.



F. obliqua



F. obliqua



F. obliqua



Flacourtia rukam
Filimoto

Filimoto has a flexible growth form and can grow as either a large shrub or a small tree, depending on how it is pruned. The leaves have 'teeth' on the edges, and the branches have a zig-zag appearance near the ends, providing good vegetative diversity. The flowers are small, bright yellow or cream, and with many filaments. The flowers are found in open clusters along the branches. Pe'a and iao visit the flowers. The fruits are spherical, bright red berries about one inch across. They are edible and very sour, and can be used for cooking. Traditionally, Samoans have used filimoto to make jam or jelly. The fruits are eaten by lupe and pe'a.

Filimoto has excellent potential as an ornamental that produces edible fruits. It grows well in bright light so it can be planted almost anywhere and could be pruned to maintain the desired stature. It would look nice as part of a hedge, or as a stand-alone shrub, where it would get full sunlight and produce abundant flowers and fruits. As a tree, it should be incorporated with other shrubs and trees where the yellow flowers and red fruits would provide a good color contrast to other species. The only potential concern with filimoto is that a plant is either male or female. Male plants produce flowers only, whereas female plants will produce flowers and fruits. It would be a good idea to plant several and wait to see which produce fruits. If you want to have a native species that produces edible fruits, then filimoto is a great choice.



W. A. Whistler



Garuga floribunda
Vivao

Vivao is a large tree with an open, spreading crown that produces light shade. The trunk has pale, knobby bark. The leaves are compound, with light green, fuzzy leaflets that have small teeth along the edges. Usually a tree will have several red leaflets in the crown, adding flashes of color. The flowers are small and white or yellow, and the fruit is small and spherical, green when immature and turning dark blue when mature. These fruits are probably eaten by lupe.

Vivao should be planted in an open area, where it could grow fastest and achieve a large size.



Glochidion ramiflorum
Masame

Masame is a common small tree that is usually found in disturbed areas, roadsides, and in abandoned plantations. As a result, it is well suited to grow in open areas of homesteads. The canopy is narrow but provides good shade over a small area. The flowers are small but bright yellow and found in small clusters all along the branches. The fruits are light green, dry, flattened spheres that split open into several bright red seeds eaten by fuaia and miti vao. Masame has been used in Samoa for making fale posts, because the wood is hard and the tree grows with a straight trunk. In the past decades, however, the use of masame for posts has declined, as people have favored the fast growing, non-Samoan species pomouli (*Fluggea flexuosa*). My opinion is that the practice of planting masame should be revived.

Masame is an excellent choice for a small tree to plant near a house, fale, or other structure. The growth form of masame makes it an excellent vegetative ornamental, and the small but conspicuous fruits add color and possibly wildlife visits to a garden. It looks great as a stand-alone tree, and I have seen beautiful specimens in front of houses, with nicely trimmed crowns that have excellent shape and do not take up too much space. It can be integrated with a hedge, where it would add height diversity.



Guettarda speciosa
Puapua

Puapua is a large shrub or medium-sized tree usually found on sandy coastal soils. It has large rounded leaves with prominent venation, making it a great choice as a foliage ornamental. The flowers are fragrant, bright white, tubular and with flaring, many-lobed petals. They are suitable for iao and long-tongued insects such as moths or butterflies. The fruits are green to brown, dry spherical capsules about two inches across, and might attract wildlife such as the lupe or the pe'a fanua.

Given the large and pleasant leaf size and shape, puapua would be useful for a large hedge or as a stand-alone tree that attracts a diversity of winged wildlife. Because it naturally occurs in coastal areas that may be crowded with other vegetation, I have never seen puapua as a stand-alone tree. However I suspect it would work well in combination with other species such as fau.



J. Seamon / DMWR



Hernandia moerenhoutiana
Pipi

Pipi is a unique and relatively uncommon tree species in American Samoa. It is a medium to large tree, and can grow to be 20 – 25 m tall. When grown in open conditions the dense crown can be beautifully formed, as in the photograph above. The leaf has three distinct veins arising from the base, and the leaf stalk is long and attaches to the leaf at an angle. The flowers are small, white or cream colored, and found in dense, long-stalked clusters near the ends of the branches. They are probably visited by insects, *iao* and *segasegamau'u*. The mature fruit is a bright yellow-orange, hollow vesicle 2 – 3 inches long, containing a spherical, dry nut-like seed. This vesicle is probably eaten by *pe'a*, *lupe* or *fuia*.

Pipi has some of the most beautiful leaves of any Samoan tree, so it should be planted where this feature will be most visible. In addition, the unique fruits are unlike any other in Samoa, with the exception of *pu'a*, its sister species. The small to medium size of pipi means that it can be planted close to houses or *fales*, and in association with shrubs. It would be a great as a stand-alone tree near roadsides or footpaths.



Hernandia nymphaeifolia
Pu'a

Pu'a is a huge coastal tree with a massive crown. It grows to about 15 m, and the trunk can be very fat, with a gnarled, twisted form. The leaves are large and broad with a bluntly pointed tip. The long, light green leaf stalk attaches to the leaf from below. The flowers are usually less than one inch across, and produced in wide clusters near the ends of the branches. Pu'a flowers are a beautiful white with yellow in the center, and are visited by the iao and the sega (in Manu'a). The fruits are nearly spherical, hollow vesicles surrounding a hard seed. The vesicle is pale green when young, and as the fruit matures it becomes dark red.

Pu'a is a great choice to plant in wide-open areas where it is desirable to have a stout tree with a massive, shade-producing crown. It can certainly command attention without the help of any other species, so pu'a should be planted away from other structures or plants. Excellent specimens of pu'a can be seen at the north end of Lion's Park, where the photograph above was taken.



Hibiscus



Hibiscus



Thespesia



***Hibiscus tiliaceus* and *Thespesia populnea* Fau and Milo**

Fau is a member of one of the most widely planted ornamental families in the tropics, the Malvaceae. There are only two large species of Malvaceae in American Samoa, *Hibiscus tiliaceus* (fau) and *Thespesia populnea* (milo). Fau is a very common forest species, particularly in disturbed areas. It is already found as an ornamental in some places in American Samoa where it has been protected from cutting, but I am surprised that it is not more widely cultivated. Fau can grow as a large shrub or medium-sized tree, depending on how it is pruned. It is most beautiful as a tree, when it can produce a wide crown that produces exceptional shade. The flowers are very large and showy, with bright yellow to red petals (or a mix of the two!) and an inner base of dark purple or maroon. Birds such as iao and segasegamau'u visit the flowers. One of the great features of fau is that it can withstand strong storms and cyclones better than non-native *Hibiscus* species.

The sister species to fau, milo (*Thespesia populnea*), also has excellent ornamental potential because of its very showy flowers. It is not as common as fau, and does not become a tree like *Hibiscus*. Collection of milo seeds for propagation should be done.

Fau makes a very good hedge or stand-alone shrub, but it is most beautiful as a tree. The photograph above (taken in Lion's Park) shows how great this species is for shade and enjoyment. Fau tops my list of species under which you can barbecue, picnic, or enjoy a nice cold drink on a hot afternoon.



Inocarpus fagifer

Ifi

Although probably introduced to Samoa long ago by Polynesians, ifi is considered to be a Samoan tree and therefore is included in this book. Ifi can be found in moist areas of the forest, especially near streams. It can reach 20 m in height, with a unique trunk that forms 'flutes', which are tall, narrow buttresses. This characteristic is not seen in any other Samoan species. The leaves can be more than 10 inches in length. The crown is usually dense but tall and narrow. The flowers are small and white or yellow, and ifi trees growing in open areas can have huge numbers of flowers. The fruits are large green, somewhat flattened spheres that are eaten by pe'a.

Ifi should be planted in or near wet areas, where it will protect the soil from erosion and add a very unique structure to the vegetation. It will also provide the pe'a with a useful food source. The fluted trunk makes ifi a great choice to add structural diversity to a garden.



W. A. Whistler



Intsia bijuga
Ifilele

Ifilele is an important tree for making various Samoan implements and handicrafts. It can only be found in a few places in American Samoa and is considered to be a rare species. It is a large tree that can have a straight trunk when mature. The leaves are compound, with rounded, slightly curved leaflets. The flowers are white with dark reddish-purple filaments that have bright yellow tips. The tree does not grow exceptionally fast, but despite this fact it is interesting to know that even small trees in the open can produce flowers several times per year. The fruits are short, wide pods containing several seeds.

Ifilele almost certainly requires partial shade as a seedling and sapling. It is probably best to plant it at a distance from any structure, but it might be best to plant it in association with fast-growing species. Although ifilele will grow well in a garden, without a doubt these trees should always be protected from cutting. Please preserve this species!



Kleinhovia hospita
Fu'afu'a

Fu'afu'a is a common light-loving, medium to large-sized tree. It has a large, bushy, round crown with broad, heart-shaped leaves. Fu'afu'a produces a large quantities of lively, bright pink flowers on upright branching stalks. This is the only large Samoan tree species with bright pink flowers. The fruits are inflated star-shaped capsules that can be cream, gold or brown in color. The flowers and fruits can often be found on the tree simultaneously, giving fu'afu'a a wide variety of colors and textures to beautify the garden.

Fu'afu'a has the potential to be a very popular ornamental in American Samoa. It will grow quickly in high light and therefore should be planted in the open areas. Due to its large crown, it should not be planted next to the house. My recommendation is to plant fu'afu'a as a roadside tree, where the bright pink flowers can be enjoyed by all. The photo above shows just how well this species works as a roadside tree. I have seen beautiful specimens planted next to the road in other countries, too. This is a highly recommended ornamental species.



Leukosyke corymbulosa
'Ala'alatoa

'Ala'alatoa is a common roadside shrub that grows well in open light conditions. It has coarse, toothed leaves with bright green on the upper side and white underneath. This dual leaf coloration is uncommon in Samoa, making 'ala'alatoa an excellent foliage shrub. The flowers are tiny, and the fruits are small, white and fleshy, and eaten by fuia.

I have never seen 'ala'alatoa used as an ornamental, but I am confident that it would be great as a free-standing shrub or as part of a hedge because of its growth form and leaf coloration. The fruits are eaten by a number of bird species so not only would there be great color from the leaves, but also there would be wildlife visitors.



M. harveyana



M. harveyana



M. harveyana



M. stipulosa

***Macaranga harveyana* and *M. stipulosa* Laupata**

Laupata (*M. harveyana*) is a common tree in disturbed areas and in regenerating forests. It is a fast growing species that grows up to 20 m tall in open areas, with large leaves that produce a well-formed, rounded crown that makes excellent shade. The flowers are small and yellow, and the fruits are small and spherical with soft spines. The fruits are produced in large quantities by young and old trees alike. The fruits are eaten by fuia and miti vao. Laupata is an important species ecologically. It is one of the first tree species to establish in disturbed areas, and when the trees bear fruit, fuia and miti vao come to eat them, meanwhile bringing in seeds of other species. Then, the shade from laupata is beneficial for the establishment and growth of those other tree species. Thus, laupata is important to begin the process of forest recovery after disturbance.

Laupata could be planted next to a house where it would provide shade, or it would be a good stand-alone tree in an open area. One important use of laupata is to plant it in association with trees or shrubs that require partial shade. Since it is a fast growing species, laupata will produce excellent shade within a year or two. A related species, *M. stipulosa*, grows well in open light and has very large leaves that produce excellent shade.



Melastoma denticulatum
Fua lole

Fua lole is a common shrub or small tree in upper elevation forest. Sister species of fua lole are planted extensively in the tropics so I am confident that this can be planted successfully in Samoa, even near sea level. It has soft, velvety leaves densely covered with short hairs. Five main veins arise from the leaf base. The flowers, found at the end of the branches, are delicate and white with yellow filaments inside. The fruits are round and split open to reveal a purple edible pulp containing many small yellow seeds, which is probably eaten by iao or segasegamau'u.

Fua lole has excellent potential as an ornamental shrub or small tree. It would do well planted near a house or fale, where the delicate flowers could be appreciated. It would also work well when planted near a path, integrated into a hedge and trimmed to keep it as a shrub. It grows well in high light or in partial shade. This particular species has never been used as an ornamental, but given the success of other *Melastomas*, it is highly recommended to start planting this species across the islands.



Micromelum minutum
Talafalu

Talafalu is a shrub or small tree in the citrus family. It has shiny compound leaves with slightly asymmetrical leaflets. When the leaflets are crushed, they have a very pleasant citrus fragrance. The flowers are small, white, and fragrant and the fruits are small and elliptical in shape and can be green, yellow, orange, or red. This colorful array can be seen on any individual that has maturing fruits.

In nature, talafalu tends to grow in the dark shade of the rainforest, so it should be grown in partial shade, under larger trees where it can be protected from harsh, direct sunlight. With pruning and proper care, I believe this plant could be a well-formed, leafy shrub that produces a high quantity of aromatic flowers and colorful fruits eaten by birds.



Neonauclea forsteri
Afa

Afa is one of the most interesting tree species in American Samoa because it has a variety of possible growth forms. Typically, it is a massive rainforest tree more than 30 m tall, with a huge crown and a trunk of up to 3 feet in diameter. But I have also seen afa growing as a shrub on rocky cliffs of Alava ridge road (see upper right photograph), and I have even seen it as a tiny, single-stemmed plant only 12 inches tall and with a full flower head! As a tree afa has a dense crown of leaves and a straight trunk. It has perhaps the most striking, intricate and beautiful flowers in Samoa. Each flower is small and yellow with one long, straight white filament emerging. The flowers are grouped into spheres, making a large yellow and white globe. The flowers are visited by iao and probably segasegamau'u.

The ornamental possibilities of afa are virtually unlimited. It would grow well in partial shade or open light conditions. It could be planted away from the house where it would be an excellent stand-alone tree. It could probably be pruned to form a shrub that would work well next to a house in partial shade, or as part of a group of plants of varying heights in open light. This phenomenal species is a very high priority ornamental that requires experimentation!



Palaquium stehlinii
Gasu

The gasu tree is not very well known in American Samoa because it has not been used for any purposes. But it certainly has ornamental potential. Gasu has dark green, shiny leaves arranged in a spiral pattern along the branch. The flowers are bright yellow and produced in large quantities, making it highly distinguishable and brilliant during flowering episodes. The flowers are visited frequently by pe'a vao, but a flowering tree would be expected to attract other species of wildlife, especially birds. The fruit is large and brown, and about the size of a tennis ball. They are eaten by pe'a vao.

Very little is known about the growth requirements of gasu but this should not deter anyone from planting and experimenting with it. The large growth form suggests that it should be planted well away from any structures and allowed to grow in moderate light levels. The seedlings are normally found in less-disturbed conditions, so it is likely that the seedlings or small trees require partial shade, such as the kind produced by laupata.



Pipturus argenteus
Soga

Soga is a common small tree found in disturbed habitats and along roadsides. It has an open, well-formed crown of light green, sandpapery leaves with small teeth along the edges. The underside of the leaves is a pale green to gray color, providing good contrast. The flowers are small spheres with white filaments, and the fruits are small, white and fleshy with many small seeds. The fruits are eaten by iao, manuma, manutagi, fuia and miti vao. This tree might attract several wildlife species.

Soga prefers lots of light, which makes it a good choice for planting because it grows fast and would quickly add a new structural element to the garden. In the photo above you can see how the well-formed, arching crown complements the angular structure of the house. Soga produces light shade that can allow partial-shade requiring species to grow beneath, and it will also attract several bird species that could bring in seeds of other forest species. Soga could easily be pruned to maintain it as a shrub or to integrate into a hedge. Soga trees should be great for hanging Christmas lights or ornaments!



Planchonella garberi
'Ala'a

'Ala'a is a large tree with a somewhat narrow but densely foliated crown. The beautiful leaves are elliptical, smooth and glossy. The trunk is dark gray, and the wood is extremely hard. The flowers are small, and the fruit is a smooth, shiny, dark purple berry about one inch across, containing several shiny black, narrow, seeds. The fruits are eaten by lupe and both species of pe'a.

'Ala'a grows very slowly and seedlings probably require partial shade, so it should be planted with faster growing trees that will provide some shade and ornamental use while waiting for it to become large. Because 'ala'a is a large tree it should be planted at some distance from the house. In the forest, 'ala'a withstands cyclones very well because of its strong roots and exceptionally hard wood. If you prune young 'ala'a trees to promote good branching, then the hard wood and strong trunk would make this a great tree for building a tree house for the kids. 'Ala'a is an important species for wildlife, so existing trees should be preserved wherever possible. Lupe and pe'a that come to feed on the fruits might bring seeds from other areas, thus helping the forest recover after disturbances such as land clearing or agriculture.



Planchonella samoensis
Mamalava

Mamalava can be one of the giant trees in the forest, growing more than 30 m tall. It is a fast growing species with reddish-brown bark and a beautiful straight trunk that flares out near the bottom. The leaves can vary in size - they will be large in partial or full shade, and significantly smaller in higher light levels. They are thick with raised veins on the underside, which give them an interesting texture. The fruits are about 2 inches long and shaped like a football. They are green when immature, but turn yellow, orange and finally red as they mature. Lupe and both species of pe'a eat mamalava fruits.

Mamalava would be a great choice to plant in in a place where its large size would make a beautiful focal point. It should be planted well away from the house and can be grown in high light levels where it will respond with a fast growth rate. I believe that seedlings could grow well in light shade under olioli, where seedlings will give a more 'forest-like' appearance to the garden before ultimately becoming towering giants.



J. Seamon / DMWR



M. Van de Bult

Pometia pinnata

Tava

Tava is a large forest tree that grows mainly on rocky soils. It used to be a dominant tree of the Tafuna area, but due to urbanization and development it has now almost completely disappeared from Tutuila. Nowadays it can only be found in the Ottoville forest on Tutuila and in parts of Manu'a. Tava trees can grow taller than 20 m height with a straight trunk and attractive, light brown bark that sometimes has a pink tint to it. The leaves are large and compound, with prominent teeth on the margins. The crown will produce excellent shade. New tava leaves are bright red, which provides an attractive accent. The flowers are small and produced in long, dense clusters with a kaleidoscope of white, yellow and pink colors. The flowers are probably visited by iao and segasegamau'u. The fruit is a cluster of large edible spheres, and are eaten by pe'a vao.

This robust tree should be a high priority ornamental because of the need to conserve the populations. The tree can grow well in open conditions and could be planted at any distance from a structure. It is an excellent stand-alone tree, providing fantastic leaf and flower textures and colors. Existing trees should be preserved, but you should also plant tava to keep it from disappearing from Tutuila!



Rhus taitensis
Tavai

Tavai is a common tree, often dominating hillsides that have been cultivated in the past, or that have been disturbed by cyclones. Across many hillsides of Tutuila you can see the green tree crowns with some bright yellow leaves mixed in. The trees grow quickly, can get above 25 m height and have a very wide crown. It is a good shade-producing tree, and the leaves are lightly translucent so as to allow a little light to filter through them. This produces a marvelous yellow-green glow to the leaves when viewed from below. The flowers are small and white with yellow in the center. They are produced in large clusters that can be seen from a distance, so when the tree is flowering is it quite outstanding. Up close, the combination of white petals, yellow center and green flower stalks is very attractive. Flowers are visited by pe'a and iao. The fruits are small dark purple or black berries, which are eaten by lupe, manutagi and miti vao. You could expect to see bird life visiting mature flowering and fruiting trees.

Owing to its large size, tavai should only be planted in an open space away from any structures. Its fast growth and shade producing characteristics make it an excellent choice to plant in combination with shrubs and small trees that can survive in partial shade.



Sarcopygme pacifica
U'unu

The genus *Sarcopygme* is not found anywhere else in the world, making u'unu perhaps the most Samoan species of all the plants in this book. U'unu is usually found in higher elevation forests, such as the montane scrub forests on Pioa, Matafao, Piumafua and Lata. But I have seen u'unu in lower elevation forest to about 200 m above sea level. It is a small tree that can grow up to several meters tall with very large leaves crowded at the top of its unbranched stem, giving it whimsical appearance. The small, pale yellow or white flowers are found on a spherical head at the end of a long stalk. I do not know if wildlife use this species in any way, but in any case u'unu is a fantastic species to plant because it is a purely Samoan species with a very unique growth form that would enhance the diversity of a garden.

U'unu has a remarkable growth form and could provide a totally unique structural element to a garden. Experiments should be done to determine if it can be grown at low elevations, and under what conditions. I would suggest to grow it under partial shade, such as with olioli, where it will not be exposed to the higher heat and direct sunlight of the lowland elevations. Upper elevation villages may find easier success with u'unu but widespread trials should be done. This is a high priority ornamental.



Scaevola taccada
To'ito'i

To'ito'i is a coastal shrub that can grow in sandy or rocky soils. It naturally grows in dense, low thickets. It has bright green, shiny, waxy leaves that are broader at the tips than at the base. The flowers and fruits are crowded amongst the base of the leaves and can usually be found together on the same plant. The flowers are about 1 – 1½ inches across and with five petals arranged on one side, making the flower seem unbalanced and asymmetrical. The fruit is small, spherical and white, and eaten by lupe and possibly other birds. Fruits of most other plants in American Samoa are not white, so this is a unique trait for a native Samoan species.

As a hedge species, to'ito'i is simply unbeatable. It is already used in Hawai'i as a hedge along boulevards and at beach resorts. It would be a fantastic choice to plant on the bright side of a house, where it would bring birds in close. It's greatest ornamental purpose would be as a natural barrier or boundary marker along property lines, or aside paths or roadsides. One unique opportunity to use to'ito'i is on the Ilili golf course, where it would provide a nice barrier and could regularly claim golf balls on errant shots. This is a versatile shrub.



Sophora tomentosa

Sophora is a coastal shrub or small tree that is now a rarity in American Samoa, even though it is widely dispersed throughout the tropics. Given the high rate of coastal development around the world, many subspecies or varieties certainly face local extinction. Therefore, for this reason alone, *Sophora* should be preserved. Yet, the beauty of *Sophora* gives it excellent merit as an ornamental, and it is planted in other countries. It has compound leaves with oval, velvety leaflets. The leaves are light green above, and silvery-gray beneath, giving the plant a dusty green appearance. The bright yellow flowers are contained on spikes, and have a unique shape found only in the pea family. These flowers are present most of the year. The fruits are long pods that conform to the shape of the spherical seeds and are constricted between seeds.

As you can see from the photo above, *Sophora* makes a fantastic hedge, and it will add a new dimension of color and texture to your garden. It could be planted at any distance from the house, either alone or in combination with other, taller trees. It probably prefers sandy soil but it would be worthwhile to experiment with other soil types. It should be given full sunlight. This is a high priority ornamental.



Sterculia fanaiho
Fana'io

Fana'io is a common rainforest tree usually found in hilly areas. Trees related to fana'io are used as ornamentals in several parts of Asia, and it has excellent potential here in American Samoa. Fana'io is a medium-sized tree that can achieve heights of 15 m or more with a somewhat open crown that provides light shade. This species loves the light and it is a moderately fast grower. The trunk grows straight, often with slightly flaring buttresses at the base. It has an open crown of bright green leaves with a slight heart-shape at the base. The leaves are clustered at the end of the branches in a spirial arrangement. When viewed from below, the thin fana'io leaves are a slightly translucent light green - a trait shared by only a few other tree species in American Samoa. On small trees in the shade, the leaves are large, thin and papery, and they would add nice contrast to the thick, dark green leaves of many other tree species like fetau or tamanu. The flowers are small and reddish. The fruit is a bright red capsule about 4-5 inches long that splits open to reveal several dark, spherical, hard seeds. The fruit capsules are clustered together in a star-shaped arrangement. Lupe will visit fruiting fana'io trees.

Fana'io should be planted in the open, or in association with slower-growing species, providing them partial shade as they grow to maturity. It should not be planted near any structures.



Syzygium clusiifolium (and *Syzygium dealatum*, not pictured)
Asi vai

Asi vai refers to two closely-related species of the genus *Syzygium* that have similar growth form, leaves, flowers and fruits. These two species of *Syzygium* can be difficult to tell apart; in fact, they carry the same Samoan name so for ornamental purposes they can be considered together. Asi vai is a medium-sized tree that can achieve 15 m height with a densely foliated crown of dark green leaves producing good shade. The flowers are white with many filaments, and grow in dense clusters; they are visited by pe'a and several species of birds. Plump, dark purple fruits hang in heavy clusters like bunches of fat grapes. Asi vai can produce tremendous fruit loads, which are probably eaten by pe'a.

Asi vai grow slowly, so it is very important to preserve existing trees whenever possible. It could be planted in association with faster-growing tree species that will provide ornamental beauty while waiting for asi vai to get large. When it has flowers and fruits, asi vai will attract birds and bats. Those animals will then bring in seeds of other species.



Syzygium inophylloides

Asi

Asi is a common rainforest tree that tends to grow on ridges and well-drained soils. One of the reasons it is common on ridges is that it survives cyclones better than other species because of its hard wood and strong root system, which prevents it from being blown down by strong winds. It can reach more than 20 m height with a tall, billowy crown. The flowers are about one inch across, and consist of many white filaments surrounding a lightly fragrant nectar cup. The flowers can be produced in huge quantities, and attract pe'a and many species of birds, especially the iao and segasegamau'u. During the flowering season, the tree is usually busy with wildlife. The fruits are about the size of an egg, yellow and hard when mature.

Asi seedlings are normally found in the shaded understory of the rainforest, but seedlings and small trees will grow faster in lightly shaded or high light environments. Many asi seedlings were planted on the Alava Ridge road by the National Park of American Samoa, and they have survived and grown quite well. Because asi is a large tree it should be planted away from the house. The tree can be a magnificent focal point of the garden, particularly because it would attract a lot of wildlife with its abundant flowers. The stunning tree in the photograph above was located in Tafuna, and when it flowered it was busy with iao and segasegamau'u life. Unfortunately, that tree has been cut down. What a sad loss for Tafuna! Tragedies like this should be avoided by preserving and respecting asi and other native tree species.



Syzygium samoense
Fena vao

Fena vao is a handsome, medium-sized tree that can reach up to 15 m in height. It is typically found in forest above 200 m elevation. The leaves are large, thick and leathery, and clustered near the ends of the branches. Usually there is a splash of dark red or burgundy on the leaf stalks. Like all *Syzygium* species, the flowers are small cups with many white filaments and nectar at the base, and probably visited by iao, segasegamau'u and pe'a. The medium-sized fruits are about 1½ inches long, plump, deep purple, and with a persistent cup at one end. This fruit seems suitable for lupe, manutagi, manuma and pe'a.

Fena vao has never been planted at low elevations so I do not know whether it would perform well as a lowland ornamental. But it would be worthwhile to experiment with it. Because it is not too large, it could be planted near the house, unlike the larger related asi and asi vai species. In this way, the flowers would bring wildlife close to the house. It would also be an excellent tree to plant in association with large trees, where it would increase the diversity of texture and structure to the garden.



T. catappa on Leyte, Philippines

Terminalia catappa
Talie

Talie is common along coastlines of American Samoa, and is planted around the tropics for ornamental purposes. It is already used in American Samoa as an ornamental and lovely specimens can be seen in almost every village on the islands. Talie is a large tree that can reach heights of up to 30 m, but more commonly it is about 15 m height with a thick trunk and a broad crown. The branches are horizontal, producing a layered canopy of very large leaves that produces fantastic shade. The tree will lose leaves but it will not lose all its leaves at the same time. Shortly before falling, each leaf will turn bright red, orange or yellow, creating a variety of colors among the branches. The flowers are small, white, and densely packed on spikes at the end of the branches. Flowers are visited by iao and segasegamau'u. The fruit is about 5 cm long, hard and slightly flattened, with one large seed. Both species of pe'a eat the fruits.

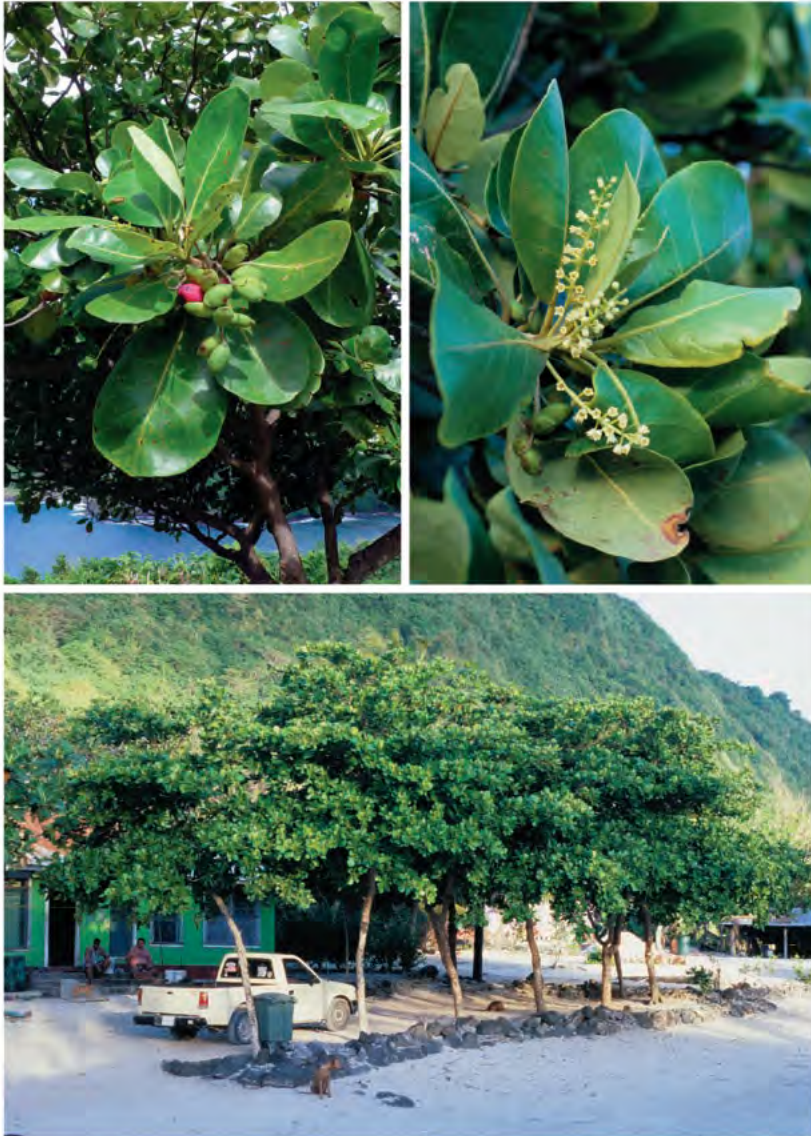
Talie is an excellent choice for a large shade tree. In many parts of the tropics, talie is planted for people to congregate underneath and enjoy the shade. You can plant talie anywhere shade is desired over a wide area, such as at sitting areas or by walking paths or roads. It is probably not a good idea to plant talie near a house because the crown is very wide.



Terminalia richii
Malili

Malili is a fairly uncommon rainforest tree, and it has fantastic ornamental potential. It is a fast-growing, tall tree with a wide, spreading crown that produces excellent shade. The tree grows quickly and within a few years it can reach 5 m in height and have a nice crown giving useful shade. The leaves are narrow with slightly wavy edges. The white flowers are very small and found in long spikes. Flowers are usually produced in huge quantities, so the tree will be densely packed with flowers and the crown will appear cream-colored from a distance. The fruits are 1-2 inches long, somewhat spherical, and red to purple when mature. Lupe and pe'a are frequent visitors to fruiting malili trees so planting this tree could greatly benefit the lupe populations. If you want to plant a fast growing Samoan tree that will attract lupe, this is the one!

Malili is one of the best choices for a native tree tree that grows quickly, produces shade, and attracts wildlife. It could be planted near a fale or house because it will grow tall and provide good shade. Additionally, it will grow very well in open sunlight and within a few years will provide enough shade to protect other, shade-requiring species. This is a high priority ornamental tree.



Terminalia samoensis
Talie

The Samoan talie is a native coastal tree that looks like a smaller version of the common large talie. The Samoan talie is usually only 5-10 m in height, but with a full, densely foliated crown that produces fantastic shade. Note how the talie trees in the photograph above bathe the fale in shade. This can be expected with proper planting of the species. The small white flowers are produced at the ends of the branches, and are probably visited by several species of birds. The fruits are small flattened spheres that turn red when they are mature.

The photograph above shows the best possible use of the Samoan talie. It should be planted near a house or fale where its shade can be enjoyed. Planting in groups, as shown above, would magnify the positive shade benefits of the species. It can grow on sandy soil or upland (volcanic) soil and will grow best in full sunlight. This is one of the best native species to have a picnic under, or to relax beneath with a nice cool drink.



Tournefortia argentea
Tausuni

The tausuni tree is a beautiful, small beach tree that grows to about 5 m height. It can be seen along roadsides and near some houses on the coast, particularly on the east side of Tutuila and on Aunu'u. The tree has one of the best growth forms of any native Samoan tree, with several meandering branches supporting a well-rounded crown of soft, velvety, silver-green leaves. Tausuni produces good shade that offers relief from the hot beach sun. The flowers are small and white, and found in large clusters. The fruits are small and spherical, and tightly packed in pendulous clusters at the ends of the branches.

Tausuni is spectacular as a stand-alone tree because of its near-perfect crown, silvery-green leaves and unique branching form. It would fit perfectly next to a beach fale or near a house, where it would provide excellent shade and a shape that would complement a fale. It probably grows best on sandy soil, but you should try planting it away from the beach areas, too. Tausuni is one of the best picnic species for the beaches of American Samoa.



Trichospermum richii
Ma'o'sina

The ma'o'sina tree is a fast-growing Samoan tree that is virtually unknown to contemporary Samoans because it does not have any recognized uses today. It is a small to medium sized tree that can grow to about 20 m in height. The crown will provide moderate shade. The leaves are quite attractive because they are stiff, dark green above and lighter below, and covered with very short, soft hairs. At the base of the leaf you can see a pair of small glands. The edges of the leaves have minute, fine teeth giving it excellent texture. The flowers have two rows of creamy-white petals. They are found in clusters nestled among the leaves. Pe'a fanua and iao will visit the flowers. The fruits are dry, flattened brown capsules blown off the tree by the wind.

The major virtues of ma'o'sina are its fast growth, ability to provide shade rather quickly, and its beautiful flowers. It would be a great tree to plant near a fale, where both the stature and the flowers could be best appreciated. This species should definitely be promoted and experimented with, to see what kind of growth forms it could take. One note of caution: in natural forest, tall ma'o'sina trees tend to blow over in cyclones. Therefore, when planting in your garden you might want to keep it in open light in order to maximize its ability to get strong roots and a robust trunk.

Species Recommendation Tables

Recommended large trees. These species should be planted away from a house.

Scientific Name	Samoan Name	Characteristics
<i>Alphitonia zizyphoides</i>	Toi	Beautiful symmetry and branch form.
<i>Barringtonia asiatica</i>	Futu	Large glossy leaves and large flowers visited by pe'a. Excellent shade properties. Slow-growing so should be preserved.
<i>Bischofia javanica</i>	'O'a	Unique leaves and bark, good shade properties, large clusters of flowers and fruits.
<i>Calophyllum inophyllum</i>	Fetau	Beautiful, shiny dark-green leaves with unique venation, and clusters of white and yellow flowers.
<i>Dysoxylum samoense</i>	Mamala	Fast growing, good shade properties, beautiful flower and fruit clusters, important for wildlife.
<i>Ficus obliqua</i>	Aoa	Very important for wildlife, beautiful shade properties.
<i>Ficus prolixa</i>	Aoa	Magnificently large tree that towered over the Tafuna plain and provided habitat and food for many wildlife species. An important tree species to American Samoa.
<i>Hernandia nymphaeifolia</i>	Pu'a	Massive tree that will produce superior shade.
<i>Neonauclea forsteri</i>	Afa	Fantastic spherical flower heads; it can grow as a shrub or a tree.
<i>Planchonella samoensis</i>	Mamalava	Tall tree with beautiful bark and a straight trunk with robust buttresses.
<i>Pometia pinnata</i>	Tava	Threatened on Tutuila, attractive to wildlife, beautiful bright red young leaves and colorful flower clusters. Important to preserve existing trees on Tafuna!
<i>Rhus taitensis</i>	Tavai	Fast-growing species with lightly translucent green leaves; excellent for planting as a canopy species to cover shorter trees.
<i>Syzygium inophylloides</i>	Asi	Important to preserve; slow growing; flowers are important for wildlife.
<i>Terminalia richii</i>	Malili	Fast growing, beautiful leaves, abundant flowers, fruits important for wildlife.

Recommended medium-sized trees. Can be planted near a structure, along roadsides or footpaths, depending on the species.

Scientific Name	Samoan Name	Characteristics
<i>Bruguiera gymnorrhiza</i>	Togo	Excellent form; crown has fleshy leaves and bright red flowers attractive to iao and segasegamau'u. The seed germinates while still on the tree.
<i>Calophyllum neo-ebudicum</i>	Tamanu	Shiny, stiff, deep-green leaves with parallel venation; bright red young leaves; bark may have a yellow or orange tint.
<i>Cananga odorata</i>	Moso'oi	Fast-growing tree with highly fragrant flowers that will attract wildlife.
<i>Cerbera manghas</i>	Leva	Flaring white flowers complement the non-native pu'a tree, and leva has more leaves.
<i>Elaeocarpus ulianus</i>	A'amati'e	Clusters of ornate white, bell-shaped flowers; leaves have teeth on the edges.
<i>Guettarda speciosa</i>	Puapua	Very large leaves; white tubular, fragrant flowers.
<i>Hernandia moerenhoutiana</i>	Pipi	Dense, beautiful crown of uniquely shaped leaves, and orange hollow fruits.
<i>Hibiscus tiliaceus</i>	Fau	A common species with large, showy yellow flowers.
<i>Inocarpus fagifer</i>	Ifi	Beautifully formed, fluted trunk; large fruits eaten by pe'a. The tree is an excellent choice for wet areas.
<i>Kleinhovia hospita</i>	Fu'afu'a	Bright pink flowers in dense clusters, fruits are inflated stars.
<i>Macaranga harveyana</i>	Laupata	Exceptional shade characteristics; fruits are eaten by fuia. This species grows quickly.
<i>Syzygium clusiifolium</i>	Asi vai	Flowers are important for wildlife; large purple fruits are in magnificent clusters; slow-growing so should be preserved.

Recommended small trees. These species can be planted next to a house or fale, along paths or the roadside, or in combination with trees of other sizes.

Scientific Name	Samoan Name	Characteristics
<i>Barringtonia samoensis</i>	Falaga	Open, narrow crown with lovely hanging strings of ornate flowers.
<i>Casearia samoensis</i>		Endemic to Samoa; yellow fruits split to reveal orange pulp tasty to birds.
<i>Cordia subcordata</i>	Tauanave	Beautiful form with moderate to large light green leaves, and spectacular bright orange flowers.
<i>Cyathea</i>	Olioli	Tree-fern with feathery 'leaves' adding a delicate yet prehistoric element to the garden.
<i>Fagraea berteriana</i>	Pualulu	Excellent form as a small tree; fragrant flowers should be incorporated into traditional Samoan uses.
<i>Ficus tinctoria</i>	Mati	Excellent shade properties, small red figs eaten by birds.
<i>Flacourtia rukam</i>	Filimoto	Small but bright yellow flowers; red fleshy fruits are edible.
<i>Glochidion ramiflorum</i>	Masame	Compact, shade-bearing crown atop a straight trunk of very good quality wood.
<i>Melastoma denticulatum</i>	Fua Iole	Soft leaves, delicate white flowers; excellent potential as a shrub if it can be grown at low elevations.
<i>Pipturus argenteus</i>	Soga	Beautiful arching crown; small white fruits eaten by birds.
<i>Rhizophora samoensis</i>	Togo	The growth form with stilt roots is uncommon in trees; yellow flowers and a seed that germinates on the tree.
<i>Sarcopygme pacifica</i>	U'unu	Endemic genus to Samoa; large leaves and an unbranched growth form; should be tested to see if it can be grown at low elevations.
<i>Terminalia samoensis</i>	Talie	Small talie tree; superb shade properties.
<i>Tournefortia argentea</i>	Tausuni	Beach tree with exceptional growth form and shade properties; beautiful grayish leaves; clusters of small white flowers and small spherical fruits.

Recommended shrub or hedge species. These species can be planted next to a house, along the property boundary or footpath, or mixed in with larger trees to add structural beauty.

Scientific Name	Samoan Name	Characteristics
<i>Astronidium navigatorum</i>		Might be possible to prune as a shrub.
<i>Cyrtandra</i> species		Several species may have excellent potential; needs experimentation.
<i>Fagraea berteriana</i>	Pualulu	I believe this species could be 'trained' and pruned to keep it as a shrub or even as a hedge.
<i>Flacourtia rukam</i>	Filimoto	Definitely can be a robust shrub integrated into a tall hedge.
<i>Hibiscus tiliaceus</i>	Fau	Could be pruned to keep as a tall hedge.
<i>Leukosyke corymbulosa</i>	'Ala'alatoa	Excellent two-toned leaves and potential to be pruned into a well-formed shrub. Needs experimentation.
<i>Melastoma denticulatum</i>	Fua lole	Leaves and flowers would be an excellent addition to a hedge.
<i>Micromelum minutum</i>	Talafalu	Beautiful shiny leaves and colorful fruits would be a fantastic addition to a garden or a hedge.
<i>Scaevola taccada</i>	To'ito'i	Dense foliage and low growth form. Unique asymmetrical flowers.
<i>Sophora tomentosa</i>		Uncommon coastal species in need of protection; soft and velvety silvery-green leaves; beautiful stalks of bright yellow flowers, and artistic seed pods.

Recommended shade trees. Although every tree in the world produces shade, the species in this table have exceptional traits owing primarily to a nice broad crown relative to the height of the tree. Dark shade species are those that will produce the deepest shade with the greatest cooling effect, and which might prevent growth of other plants beneath them when mature. Without a doubt, the dark shade species are the best to sit and relax under, preferably with a nice cold drink in hand. Light shade species are those that are recommended for producing shade to allow partial-shade requiring or shade-tolerant species to grow underneath.

Dark shade species

Scientific Name	Samoan Name
<i>Barringtonia asiatica</i>	Futu
<i>Calophyllum inophyllum</i>	Fetau
<i>Ficus obliqua</i>	Aoa
<i>Ficus tinctoria</i>	Mati
<i>Hernandia nymphaeifolia</i>	Pu'a
<i>Hibiscus tiliaceus</i>	Fau
<i>Terminalia catappa</i>	Talie
<i>Terminalia samoensis</i>	Talie

Light shade species

Scientific Name	Samoan Name
<i>Cordia subcordata</i>	Tauanave
<i>Cyathea</i> species	Olioli
<i>Kleinhovia hospita</i>	F'u'afu'a
<i>Macaranga harveyana</i>	Laupata
<i>Pipturus argenteus</i>	Soga
<i>Rhus taitensis</i>	Tavai
<i>Terminalia richii</i>	Malili
<i>Tournefortia argentea</i>	Tausuni

Trees with notable flower characteristics.

Scientific Name	Samoaan Name	Characteristics
<i>Aglaia samoensis</i>	Laga'ali	Small but fragrant flowers.
<i>Barringtonia asiatica</i>	Futu	Large showy and fragrant flowers attract bats.
<i>Barringtonia samoensis</i>	Falaga	Long hanging inflorescences of flowers with many dark red filaments.
<i>Calophyllum inophyllum</i>	Fetau	White petals with yellow filaments.
<i>Calophyllum neo-ebudicum</i>	Tamanu	White petals with yellow filaments.
<i>Cananga odorata</i>	Moso'oi	Bright yellow and highly fragrant flowers produced in dense clusters.
<i>Casaeria samoensis</i>		Small but striking white flowers.
<i>Cerbera manghas</i>	Leva	Bright white flowers with a red center.
<i>Cordia subcordata</i>	Tauanave	Bright orange flowers.
<i>Dysoxylum samoense</i>	Mamala	Small white flowers are found abundantly in hanging clusters.
<i>Elaeocarpus ulianus</i>	A'amati'e	Small but spectacular white bell-shaped flowers with a fringed edge.
<i>Erythrina variegata</i>	Gatae	Many flamboyant clusters of bright red or orange flowers.
<i>Fagraea berteriana</i>	Pualulu	White or yellow, tubular and fragrant.
<i>Guettarda speciosa</i>	Puapua	Bright white, tubular flowers.
<i>Hibiscus tiliaceus</i>	Fau	Large, bright yellow flowers.
<i>Kleinhovia hospita</i>	Fu'afu'a	Abundant bright pink flowers.
<i>Melastoma denticulatum</i>	Fua Iole	White flowers with delicate petals.
<i>Neonauclea forsteri</i>	Afa	Bright yellow spherical heads with white filaments.
<i>Pometia pinnata</i>	Tava	Long, dense clusters of yellow and pink flowers are produced in large quantities.
<i>Sophora tomentosa</i>		Bright yellow flowers on straight spikes.
<i>Syzygium inophylloides</i>	Asi	Small flowers with many white filaments are produced in large quantities.
<i>Terminalia richii</i>	Malili	Very small creamy flowers are produced in large quantities.
<i>Trichospermum richii</i>	Ma'o'sina	Open, white, star-shaped flowers with two rows of petals surrounding a group of short yellow filaments.

Trees with notable leaf characteristics.

Scientific Name	Samoan Name	Characteristics
<i>Alphitonia zizyphoides</i>	Toi	Light green above, light gray below.
<i>Astronidium navigatorum</i>		Leaves have veins in a square pattern.
<i>Barringtonia asiatica</i>	Futu	Very large and shiny leaves.
<i>Bischofia javanica</i>	'O'a	Each leaf has three leaflets with teeth along the edges.
<i>Calophyllum inophyllum</i>	Fetau	Thick, leathery, dark green leaves with a yellow midrib and dense venation.
<i>Calophyllum neo-ebudicum</i>	Tamanu	New leaves are dark red; mature leaves are thick and leathery with dark green color and a bright yellow midrib and dense venation.
<i>Cyathea</i> spp.	Olioli	Large, feathery fronds.
<i>Dysoxylum maota</i>	Maota	Many downward-hanging leaflets provide unique texture.
<i>Ficus uniauriculata</i>	Mati	This species of mati has asymmetrical leaves with an 'ear-like' lobe at the base.
<i>Guettarda speciosa</i>	Puapua	Very large leaves with widely spaced leaf veins.
<i>Hernandia nymphaeifolia</i>	Pu'a	Large, nearly triangular leaves with long leaf stalks and yellow veins.
<i>Hernandia moerenhoutiana</i>	Pipi	Leaves are nearly diamond-shaped with three main veins arising from leaf base; leaf stalk is very long.
<i>Leukosyke corymbulosa</i>	'Ala'alatoa	Small leaves, bright white underneath, teeth along the edges and short, stiff hairs.
<i>Macaranga harveyana</i>	Laupata	Rounded leaves with a pointed tip and a long leaf stalk that attaches to the leaf in the middle of the blade.
<i>Melastoma denticulatum</i>	Fua lole	Small leaves with almost parallel veins and short, fuzzy hair.
<i>Pometia pinnata</i>	Tava	Large, compound leaves with teeth along the edge; new leaves are bright red.
<i>Sarcopygme pacifica</i>	U'unu	Huge leaves emerging at the top of the stem. Whimsical and unconventional.
<i>Sophora tomentosa</i>		Light green leaves with soft, short silvery hairs on the leaves.
<i>Tournefortia argentea</i>	Tausuni	Velvety silvery-green leaves.

Trees with notable fruit characteristics.

Scientific Name	Samoan Name	Characteristics
<i>Barringtonia asiatica</i>	Futu	Large, four-angled fruits.
<i>Bischofia javanica</i>	'O'a	Small brown spheres produced in very large quantities.
<i>Bruguiera gymnorrhiza</i> and <i>Rhizophora samoensis</i>	Togo	The seed germinates on the tree, producing a cigar-shaped propagule.
<i>Calophyllum inophyllum</i> and <i>Calophyllum neo-ebudicum</i>	Fetau and Tamanu	Smooth green to purple spheres hanging in clusters.
<i>Cerbera manghas</i>	Leva	Smooth red ellipsoid fruits.
<i>Casearia samoensis</i>		Small yellow capsules that split open to reveal a bright orange pulp.
<i>Dysoxylum samoense</i>	Mamala	Clusters of light brown, spherical fruits that split open to reveal bright red seeds.
<i>Elaeocarpus ulianus</i>	A'amati'e	Light green, smooth-skinned ellipsoids with a uniquely shaped seed inside.
<i>Fagraea berteriana</i>	Pualulu	Clusters of orange, smooth-skinned fruits.
<i>Ficus tinctoria</i>	Mati	Fruits are yellow, orange or red.
<i>Flacourtia rukam</i>	Filimoto	Red spherical fruits are edible but sour!
<i>Hernandia morenhoutiana</i>	Pipi	Bright orange fleshy vesicles surrounding a seed.
<i>Hernandia nymphaeifolia</i>	Pu'a	Nearly spherical fleshy vesicles can be whitish or red.
<i>Kleinhovia hospita</i>	Fu'afu'a	Fruits are inflated star-shaped capsules ranging in color from cream to brown.
<i>Micromelum minutum</i>	Talafalu	Open clusters of small green, yellow, orange and red fruits.
<i>Planchonella garberi</i>	'Ala'a	Deep reddish-purple, smooth spherical fruits with several shiny narrow seeds.
<i>Planchonella samoensis</i>	Mamalava	Fruits change color from green to yellow to red as they mature.
<i>Sophora tomentosa</i>		Fruits are long pods that conform to the shape of the spherical seeds inside.
<i>Syzygium dealatum</i>	Asi vai	Dark purple fruits hang from the branches like large bunches of fat grapes.

Trees with particular importance to wildlife. These are probably the best species to plant if you want to attract wildlife.

Scientific Name	Samoan Name	Characteristics
<i>Barringtonia asiatica</i>	Futu	Flowers attract pe'a.
<i>Cananga odorata</i>	Moso'oi	Fruits attract lupe and manutagi.
<i>Dysoxylum samoense</i>	Mamala	Fruits attract lupe, fuia, and miti vao.
<i>Fagraea berteroa</i>	Pualulu	Trees with fruit will attract a lot of fuia.
<i>Ficus obliqua</i>	Aoa	Fruits are important to manuma, fuia, lupe and manutagi.
<i>Ficus prolixa</i>	Aoa	Fruits are more favored by wildlife than <i>F. obliqua</i> . This is one of the most ecologically important species in American Samoa!
<i>Macaranga harveyana</i>	Laupata	Fruits attract fuia and miti vao, which bring in seeds of other species to help regenerate forest after agriculture or clearing.
<i>Planchonella garberi</i>	'Ala'a	Fruits attract lupe and both species of pe'a.
<i>Planchonella samoensis</i>	Mamalava	Fruits attract lupe and both species of pe'a.
<i>Syzygium</i> species	Asi, Asi vai, fena vao	Flowers are attractive to pe'a and many bird species; fruits are used by pe'a and fena vao, and may be used by manutagi or manuma.
<i>Terminalia richii</i>	Malili	Fruits are very attractive to lupe.

Rare, uncommon or threatened trees. These are species that may have low population numbers naturally, or may be under threat and should be considered for planting in order to increase the number of trees. These species must be preserved as much as possible!

Scientific Name	Samoan Name	Characteristics
<i>Barringtonia asiatica</i>	Futu	Futu is not rare or uncommon. But, as a large coastal species, futu is under threat from sea-shore development and without question should be preserved at all times.
<i>Bruguiera gymnorrhiza</i>	Togo	Coastal mangrove under severe threat due to house construction and development at Pala Lagoon.
<i>Cerbera manghas</i>	Leva	Coastal species that may be threatened by development.
<i>Cordia subcordata</i>	Tauanave	Uncommon coastal species possibly under threat from coastal development.
<i>Ficus prolixa</i>	Aoa	Once upon a time these giants towered above the Tafuna plain; now, with most of the Tafuna forest gone, only scattered trees remain and they must be protected.
<i>Guettarda speciosa</i>	Puapua	Coastal species that may be under threat from development.
<i>Intsia bijuga</i>	Ifilele	A rare tree species found in only a few small populations on Tutuila.
<i>Pometia pinnata</i>	Tava	Extremely threatened on Tutuila due to almost total loss of natural forest on Tafuna plain.
<i>Rhizophora samoensis</i>	Togo	Coastal mangrove under severe threat due to house construction and development at Pala Lagoon.
<i>Sophora tomentosa</i>		A small coastal tree disappearing from Tutuila because of coastal development.
<i>Tournefortia argentea</i>	Tausuni	A coastal tree that lives on sandy soil. Most natural areas for tausuni have been developed.

Special use trees. These are trees that can fulfill unique needs around your house.

Special Use	Name
Only-in-Samoa species: These species are only found in Samoa and are truly Samoan species	<i>Aglaia samoensis</i> (Laga'ali) <i>Astronidium navigatorum</i> <i>Buchanania merrillii</i> <i>Casearia samoensis</i> <i>Palaquium stehlinii</i> (Gasu) <i>Sarcopygme pacifica</i> (Uunu)
Barbecue species: Great for barbecuing underneath: tall stem with wide crown providing shade.	<i>Dysoxylum samoense</i> (Mamala) <i>Hernandia nymphaeifolia</i> (Pu'a) <i>Hibiscus tiliaceus</i> (Fau) <i>Kleinhovia hospita</i> (Fu'afu'a) <i>Terminalia catappa</i> (Talie)
Hammock species: You can plant a pair of these trees close enough together to string a hammock. Straight, narrow, strong trunk with a good shade-producing crown.	<i>Glochidion ramiflorum</i> (Masame) <i>Neonauclea forsteri</i> (Afa) <i>Terminalia richii</i> (Malili) <i>Trichospermum richii</i> (Ma'o'sina)
Picnic species: Great species for providing shade for a picnic.	<i>Barringtonia asiatica</i> (Futu) <i>Cerbera manghas</i> (Leva) <i>Terminalia catappa</i> (Talie) <i>Terminalia samoensis</i> (Talie) <i>Tournefortia argentea</i> (Tausuni)
Libation species: This tree provides deep shade over a wide area, perfect for sitting under with a nice cold libation such as iced tea or lemonade. Vailima, anyone?	<i>Hibiscus tiliaceus</i> (Fau) <i>Macaranga harveyana</i> (Laupata) <i>Terminalia catappa</i> (Talie) <i>Terminalia samoensis</i> (Talie)
Sunday species: Plant this species next to the fale to produce cool shade, perfect for sleeping beneath on a Sunday.	<i>Cerbera manghas</i> (Leva) <i>Cordia subcordata</i> (Tauanave) <i>Macaranga harveyana</i> (Laupata) <i>Terminalia catappa</i> (Talie) <i>Terminalia samoensis</i> (Talie) <i>Tournefortia argentea</i> (Tausuni)
Christmas ornament species: These species have a compact, dense crown of smallish leaves that should hold a nice robust set of Christmas lights.	<i>Ficus obliqua</i> (Aoa) <i>Glochidion ramiflorum</i> (Masame) <i>Neonauclea forsteri</i> (Afa) <i>Pipturus argenteus</i> (Soga)
Golf course species: This is a perfect species for planting on a golf course, providing a low barrier. Don't lose your ball in this hedge, it might be difficult to find!	<i>Scaevola taccada</i> (To'ito'i) <i>Sophora tomentosa</i>



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