



Palms for Hawai'i Landscapes

Melvin Wong, Department of Tropical Plant and Soil Sciences

Palms are important to Hawai'i landscapes because they definitely fit the "tropical" landscape theme. When people first see palms they may get the impression that all palms look alike. With further study, you can gain a greater appreciation of each species and can detect the differences.

Palm colors

Palms do not have a great variety of color. But in tropical themes green is often an important color. Palms can be used in the background or as cover for many smaller plants that require moisture and shade. A few palms have exceptional color. *Cyrtostachys renda* (sealing wax palm, Fig. 1) has a bright, red leaf base but needs shade and wind protection for best results. In Southeast Asia you will see sealing wax palms in the open with no wind protection. But in these locations daily wind velocities are low and humidity is high. Another palm with exceptional color (orange) is *Areca vestiaria* (Fig. 2). This clumping palm will do best with some shade. The following palms are predominately grey:

Bismarkia nobilis (Bismarck palm, Fig. 3)

Dypsis decaryi (triangle palm, Fig. 4)

Latania loddigesii (blue latan palm, Fig. 5)

Pritchardia hillebrandii (luolu leo).

These palms can be used in various ways with other tropical plants that are grey.

Palms and lethal yellows disease

Throughout the tropics and subtropics, coconut palms (*Cocos nucifera*, Fig. 6) are the trees most identified

with a "tropical" theme. In many places over coconut's range, the mycoplasma disease lethal yellows threatens most coconut varieties and other palm species with extinction. Because coconut palms provide a valuable landscape theme, lethal yellows can have a strongly negative effect on tourism. Florida has battled this disease for decades with some success. Hawai'i is lucky to not be one of the locations that lethal yellows affects. This makes Hawai'i one of the better places to buy palm seed that has no danger of spreading lethal yellows. The Malaysian dwarf coconut, called Samoan dwarf coconut in Hawai'i (Fig. 7), and many other palm species are resistant to lethal yellows. The following palm species are known to be susceptible to lethal yellows:

Borassus flabellifer (Palmyra palm)

Caryota mitis (fishtail palm, Fig. 8)

Cocos nucifera (coconut palm)

Dictyosperma album (princess palm, Fig. 9)

Latania sp. (latan palm)

Livistonia chinensis (Chinese fan palm)

Phoenix canariensis (Canary Island date palm, Fig. 10)

Phoenix dactylifera (date palm, Fig. 11)

Phoenix reclinata (Senegal date palm)

Phoenix sylvestris (wild date palm)

Pritchardia affinis

Pritchardia pacifica (Fiji fan palm, Fig. 12)

Pritchardia thurstonii (Masai palm, Fig. 13)

Veitchia merrillii (Manila palm, Fig. 14)

Veitchia montgomeryana (Montgomery palm).

Bringing palm seeds to Hawai'i is a very serious violation of plant quarantine regulations because of the danger of importing lethal yellows.

“Tropical” theme palms

The following palm species can be used to portray a strong “tropical” theme:

Cocos nucifera (coconut)
Corypha lecomtei (Fig. 15)
Corypha umbraculifera (talipot palm, Fig. 16)
Arenga undulatifolia (Fig. 17)
Clinostigma ponapensis
Clinostigma samoense (Fig. 18)
Johannesteijsmannia altifrons (litter collecting palm)
Lodoicea maldivica (coco de mer)
Pelagodoxa henryana (vahane palm)
Pigafetta filaris (pigafetta palm)
Pinanga kuhlii (Fig. 19)
Prestoea tobagonis (Fig. 20)
Rhopalostylis baueria
Sabal causiarum
Sabal palmetto (Fig. 21)
Sabal parviflora (Cuban palmetto)

The use of *Pigafetta filaris* along with ferns provides a strong “prehistoric” look. *Arenga undulatifolia* is one of the most attractive large palms and looks good in parks. I encourage you to get to know the details of the above palms, so you can use them in various landscape styles.

Many palms have been used in a formal way. Many of these palm species are tall and straight and used to line streets and sidewalks. The most famous is *Phoenix canariensis* (Canary Island date palm). It has been used to line streets in Las Vegas (Fig. 22), Stanford University (Fig. 23), and the city of Santa Monica (Fig. 24). Here in Hawai'i it has not been used extensively. I have seen the following palms line streets on O'ahu:

Attalea cohune (between the Capitol building and Iolani Palace, Fig. 25)
Phoenix canariensis (Schofield military base)
Washingtonia robusta (Waialeale, O'ahu, Fig. 26).

Street palms

The following palms can and probably have been used to line streets or sidewalks:

Archontophoenix alexandrae (Alexandra, Fig. 27)
Latania loddigesii (blue latan palm)
Roystonea oleracea (Caribbean royal palm, Fig. 28)
Sabal palmetto

Syagrus romanzoffiana (queen palm, Fig. 29)
Satakentia liukuensis
Wyodetia bifurcate (Fig. 30).

These palms also add vertical lines to the landscape. When these vertical lines are repeated in sequence the effect can be powerful. The design principle of rhythm and repetition is in play here.

Indoor palms

Many palms require shade and make good indoor plants. The following are commonly used as lobby or indoor plants in Hawai'i:

Chamaedorea emesti -augustii
Chamaedorea elegans (parlor palm)
Dypsis lutescens (areca palm, Fig. 31)
Howea fosteriana (kentia palm)
Phoenix roebelenii (dwarf date palm, Fig. 32)
Ptychosperma macarthurii (Macarthur palm, Fig. 33)
Rhapis excelsa (lady palm, Fig. 34)
Rhapis spp. (dwarf rhaps palm).

In addition, *Asterogyne martiana* (Fig. 35), *Johannesteijsmannia altifrons* (Fig. 36), and *Pinanga kuhlii* are particularly attractive, but they are not easy to find.

Lyon Arboretum occasionally will offer a class on palms given by Ray Baker. He has recommended that *Synechanthus fibrosus* (Fig. 37) be tried as an indoor plant. Many more chamaedorea palms can be used as indoor plants including *Chamaedorea metallica* (Fig. 38). *Laccospadix australasica* (Fig. 39) has also been used as an indoor plant but is not easily found.

Palms as food

Palms are used for food in many ways.

- Sago: Starch material from central pith of the trunk of *Metroxylon vitiense*, *Caryota urens*, *Corypha umbraculifera*, *Borassus flabellifer*, and *Roystonea oleracea*
- Palm sugar or jaggery: This is extracted from the sap of *Borassus flabellifer*, *Cocos nucifera*, *Caryota urens*, *Phoenix dactylifera*, and *Phoenix canariensis*
- Wine: Wine is made from the sap of *Borassus flabellifer*, *Caryota urens*, *Cocos nucifera*, *Elaeis guineensis*, *Phoenix dactylifera*, *Phoenix sylvestris*, and *Sabal palmetto*
- Oil: Oil is obtained from *Cocos nucifera* and *Elaeis guineensis*

- Honey: Honey is obtained from *Cocos nucifera* and *Borassus flabellifer*
- Cabbage or hearts: Palm hearts are obtained from meristem and undeveloped leaf bases and leaves of *Archontophoenix alexandrae* (Alexandra palm), *Areca catechu* (betel nut palm), *Bactris gasipaes* (peach palm, Fig. 40), *Caryota urens* (wine palm, Fig. 41), *Cocos nucifera*, *Hyophorbe lagenicaulis* (bottle palm, Fig. 42), *Livistonia rotundifolia* (footstool palm), *Lodhkea maldivica* (coco de mer), *Normanbya normanbyi* (black palm), *Oncosperma* spp., *Roystonea oleracea* (Caribbean royal palm), *Sabal palmetto*, *Satakentia liukiuehsis*, and *Syagrus romanzoffiana* (queen palm).
- Palm fruit: *Cocos nucifera*, *Bactris gasipaes* (peach palm), *Borassus flabellifer*, and *Phoenix dactylifera*.

Coconut is a very versatile food source in Hawaii and other tropical locations. The water in the fruit is a refreshing drink, and the milk obtained by squeezing the grated endosperm is used in many tropical dishes and for making a dessert called haupia. The date palm, *Phoenix dactylifera*, and the fruit from *Borassus flabellifer* are also very important economically where they are grown. The fruit of *Bactris gasipaes* is the staple starch in Costa Rica.

I have included my favorite landscape palms for your perusal. This list is in no way complete and is very subjective. You should make your own list that includes your favorite palms.

Endemic Hawaiian palms

Hawai'i has some unique palms in the genus *Pritchardia* that deserve consideration for landscapes. It is highly recommended that these plants be acquired from nurseries specializing in native species and that plants and seeds **not** be removed from their natural habitat. The known species and their islands of origin are:

<i>P. affinis</i> * Becc.	Hawai'i
<i>P. arecina</i> Becc.	Maui
<i>P. aylmer-robinsonii</i> * H. St. John	Ni'ihau
<i>P. beccarlana</i> Rock	Hawai'i
<i>P. flynnii</i> Lorence & Gemmill	Kaua'i
<i>P. forbesiana</i> Rock	Maui
<i>P. glabrata</i> Becc. & Rock	Maui
<i>P. hardyi</i> Rock	Kaua'i
<i>P. hillebrandii</i> (Kuntze) Becc.	Moloka'i

<i>P. kaalae</i> * Rock	Oahu
<i>P. lanaiensis</i> Becc. & Rock	Lāna'i
<i>P. lanigera</i> Becc.	Hawai'i
<i>P. limahuliensis</i> H. St. John	Kaua'i
<i>P. lowreyana</i> Rock	Moloka'i
<i>P. martii</i> (Gaudich.) H. Wendl.	O'ahu
<i>P. minor</i> Becc.	Kaua'i
<i>P. munroi</i> * Rock	Moloka'i
<i>P. napaliensis</i> * H. St. John	Kaua'i
<i>P. perlmanii</i> * Gemmill	Kaua'i
<i>P. remota</i> * (Kuntze) Becc.	Nihoa
<i>P. schattaueri</i> * Hodel	Hawai'i
<i>P. viscosa</i> * Rock	Kaua'i
<i>P. waialealeana</i> Read	Kaua'i

Those marked with an asterisk are endangered (list courtesy of Curtis Daehler).

Of the 23 native *Pritchardia* species listed, I am familiar with only four. For landscape purposes I like *P. glabrata*, *P. hillebrandii*, and *P. martii*, and I do not like *P. affinis*.

Invasive species

Recent increased awareness of the dangers invasive plants can pose to native Hawaiian ecosystems has resulted in evaluation of the invasiveness of plants used in landscaping. Based on conversations with experts on palms and invasive species, the following species should be avoided:

<i>Archontophoenix alexandrae</i> (Alexandra)
<i>Livistonia chinensis</i> (Chinese fan)
<i>Pinanga kuhlii</i> (ivory cane)
<i>Ptychosperma macarthurii</i> (Macarthur)
<i>Roystonea oleracea</i> ? (Caribbean royal)
<i>Roystonea regia</i> ? (Cuban royal)
<i>Roystonea venezuelana</i> ? (Venezuelan royal)
<i>Washingtonia filifera</i> (California fan)
<i>Washingtonia robusta</i> (Mexican fan)

The species marked with a question mark are considered possibly invasive.

Information on invasive plants can be found at the website for Weed Risk Assessments for Hawaii and Pacific Islands, www.botany.hawaii.edu/faculty/daehler/wra.

References

- Rauch, Fred, and Paul Weissich. 2000. *Plants for Tropical Landscapes*. University of Hawai'i Press.
- Blombery, Alec, and Tony Rodd. 1982. *Palms*. Angus and Robertson Publishers, London, Sydney, and Melbourne.
- Hodel, Donald R. 1992. *Chamaedorea Palms*. The International Palm Society. Allen Press, Lawrence, Kansas.
- Howard, F.W. 1983. World distribution and possible geographic origin of palm lethal Yellowing disease and its vectors. *Florida Agricultural Experiment Station Journal Series*, No. 3917. Vol. 31, No.3.
- Jones, David. 1984. *Palms in Australia*. Reed Books PTY L TD, 2 Aquatic Drive Frenchs Forest NSW 2086.
- Stewart, Lynette. 1994. *Palms and Cycads of the World*. Angus and Robertson, 25 Ryde Roadm, Pymble, Sydney, NSW 2073, Australia and 31 View Road, Glenfield, Auckland 10, New Zealand.

Acknowledgments

Thank you to Ray Baker, Christy Martin, and Curtis Daehler for comments on the invasiveness of palm species.



1 *Cyrtostachys renda*



3 *Bismarkia nobilis*



2 *Areca vestiaria*



4 *Dypsis decaryi*



5 *Latania loddigesii*



7 Samoan dwarf coconut



6 "Tropical" theme with *Cocos nucifera*



7 Samoan dwarf coconut



8 *Caryota mitis*



10 *Phoenix canariensis*



9 *Dictyosperma album*



11 *Phoenix dactylifera*



12 *Pritchardia pacifica*



14 *Veitchia merrillii*



13 *Pritchardia thurstonii*



15 *Corypha lecomtei*



16 *Corypha umbraculifera*



18 *Clinostigma samoense*



17 *Arenga undulatifolia*



19 *Pinanga kuhlii*



19 *Pinanga kuhlii*



21 *Sabal palmetto*



20 *Prestoea tobagonis*



22 *Phoenix canariensis* in Los Vegas



23 *Phoenix canariensis* at Stanford University



25 *Attalea cohune* next to Capitol Building



24 *Phoenix canariensis* in Santa Monica



26 *Washingtonia robusta* at Waikēle Shopping Center



27 *Archontophoenix alexandrae*



29 *Syagrus romanzoffiana*



28 *Roystonea oleracea*



30 *Wyodetia bifurcate*



31 *Dypsis lutescens*



32 *Phoenix roebelenii*



33 *Ptychosperma macarthurii*



34 *Rhapis excelsa*



35 *Asterogyne martiana*



36 *Johannesteijsmannia altifrons*



38 *Chamaidorea metallica*



37 *Johannesteijsmannia altifrons*



39 *Laccospadix australasica*



40 *Caryota urens*



41 *Hyophorbe lagenicaulis*

Palms to consider

- Acrocomia herensis* (gru-gru)
Archontophoenix alexandrae (Alexandra)*
Areca catechu (betel nut)
Areca vestiaria
Arenga undulatifolia
Asterogyne martiana
Attalea cohune (cohune)
Bactris gasipaes (peach)
Bismarckia nobilis (Bismarck)
Borassus flabellifer (Palmyra)
Borassus spp.
Calyptrogyne ghiesbreghtiana
Caryota mitis (fishtail)
Caryota rumphiana var. *papuana*
Caryota urens (wine)
Chamaedorea cataractarum (cascade)
Chamaedorea elegans (parlor)
Chamaedorea ernesti-augustii
Chamaedorea erumpens
Chamaedorea geonomiformis
Chamaedorea metallica
Chamaedorea seifrizii (bamboo)
Chamaerops humilis (Mediterranean fan)
Chambeyronia macrocarpa (blushing)
Clinostigma ponapensis
Clinostigma samoense
Cocos nucifera (coconut)
Corypha lecomtei
Corypha umbraculifera (talipot)
Cyrtostachy renda (sealing wax)
Dictyosperma album (princess)
Dypsis decaryi (triangle)
Dypsis lutescens (areca)
Elaeis guineensis (African oil)
Howea fosteriana (kentia)
Hyophorbe lagenicaulis (bottle)
Johannesteijsmannia altifrons (litter collecting)
Laccospadix australasica (atherton)
Latania loddigesii (blue latan)
Licuala grandis (fan)
Licuala ramsayi
Licuala spinosa (spiny licuala)
Livistona chinensis (Chinese fan)*
Livistona rotundifolia (footstool)
Lodoicea maldivica (coco de mer, double coconut)
Metroxylon vitiense
Normandya normandyi (black)
Oncosperma spp.
Pelagodoxa henryana (vahane)
Phoenicophorium borsigianum (stevensonia)
Phoenix canariensis (Canary Island date)
Phoenix dactylifera (date)
Phoenix recInata (Senegal date)
Phoenix roebelenii (dwarf date)
Phoenix rupicola (cliff date)
Phoenix sylvestris (silver date)
Pigafetta filaris (pigafetta)
Pinanga kuhlii (ivory cane)*
Polyandrococos caudescens (buri)
Prestoea tobagonis
Pritchardia affinis
Pritchardia hillebrandii (loulou leo)
Pritchardia martii
Pritchardia spp. (various native species)
Pritchardia pacifica (Fiji fan)
Pritchardia thurstonii (Masai)
Ptychosperma macarthurii (Macarthur)*
Rhapis excelsa (lady)
Rhapis dwarf (dwarf rhaps)
Rhopalostylis baueri (Norfolk)
Rhopalostylis sapida (Nikau)
Roystonea oleracea (Caribbean royal)*
Roystonea regia (Cuban royal)*
Roystonea venezuelana (Venezuelan royal)*
Sabal causiarum (Puerto Rican hat)
Sabal palmetto (palmetto)
Sabal parviflora (Cuban palmetto)
Satakentia liukiensis
Syagrus romanzoffiana (queen)
Synechanthus fibrosus
Thrinax radiata (Florida thatch)
Veitchia joannis (Niusawa)
Veitchia merrillii (Manila)
Veitchia montgomeryana
Verschaffeltia splendida (verschaffeltia)
Wallichia disticha (wallich)
Washingtonia filifera (California fan)*
Washingtonia robusta (Mexican fan)*
Wyodetia bifurcate (foxtail)

*Invasive or possibly invasive (see p. 3).