

## Palm Trees for Southern Utah

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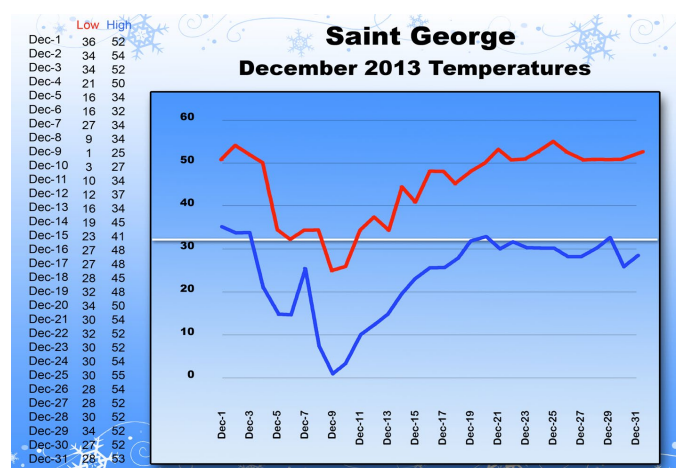
When people think of palm trees swaying in the breeze, they probably think of southern locations along the coast such as California and Florida. Hawaii is also well known for its tall coconut palm trees with slender trunks. These images are often used in vacation flyers and television commercials so that palms are associated with tropical getaways and family vacations. So why are palms seen growing in St. George, Utah, and does this “redrock” desert area have the right conditions to support palm trees?

Palm trees are from the family Arecaceae and are characterized as “trees and shrubs having tall columnar trunks and bearing a crown of large leaves.” The name is synonymous with Palmaceae and in this case palms are the only member of their family. Unlike other trees, palms do not have growth rings indicating their age, nor do they have a layer of bark overtop of cambium cells where growth initiates. In fact, palms are monocots making them more closely related to grasses rather than trees. This is one reason some purists refuse to call them trees!

### The Trouble with Palms

The very conditions under which palms are often found growing (such as warm temperatures, moist tropical air, and lack of extreme cold) are the same reasons St. George is not the ideal place for most palms. Other non-coastal areas that support palms such as Las Vegas, Nevada, and Phoenix, Arizona, do not get as cold as St. George. Temperatures going as much as 20 degrees below freezing (5-10 degrees F.) will damage many species of palm trees.

A case in point would be the winter of 2013. In December of that year temperatures in St. George, Utah, dropped to within 1-2 degrees of 0!



Data from Utah Climate Center, <https://climate.usu.edu>



*Damaged palms in St. George.*

By the summer of 2014, even some of the hardiest palm trees were not recovering. Those hardest hit were (in order of most to least damage) Mexican Fan Palm, Mediterranean Fan Palm, and the California Fan Palm. The Windmill Palm showed the least damage of any palm species in the December 2013 freeze.

## Misconceptions

Since palms appear to thrive in a desert climate, some have concluded that palm trees are “drought tolerant” and don’t need much water. This is not true! Palm trees need as much water as any tree in the landscape. They have a fibrous root system like grasses (not a tap root). Most landscape installers will put more emitters on palms when planting than any other tree. Palms, like all plants, need to be watered under the canopy at least out to the drip line. Over the life time of the palm, its roots can grow out 30 to 50 feet if the soil is moist. Emitters should be added as the palm grows.

Another misconception is that a palm can make it through the winter if a “parka” or “old sleeping bag” is placed around the trunk. Bear in mind that a tree does not produce its own heat and even with an insulated cover will eventually get as cold as the outside air temperature. An exception to this when some heat provided from Christmas lights (non LED) or heating cables (used to protect water pipes) are used. The reason that vegetables and flowers are often protected from cold temperatures by the use of covers such as “Reemay,” plastic, and even blankets is because when applied early in the evening (before frost) they trap the warm air between the ground and the plant, providing an insulated layer. The area on a palm tree, often referred to as the “heart,” is located at the top of the tree 18 to 24 inches from where the fronds emerge. This is the part that is most sensitive to cold, and if damaged, the tree will die.

## Pruning and Maintenance

Palm trees should only be pruned after all danger of freezing weather has passed. Some prune in the fall to allow room for the “parka” to fit over. This may even be counterproductive since it not only gives a false sense that the tree is protected by the cover, but removal of the fronds near the “heart” takes away some of the natural insulation from the tree’s most vulnerable area. Only the oldest fronds should

be removed once they have turned brown. These older fronds will also turn downward and the tips will drop below the heart where they originate. Removal of too many green fronds will cause the top of the trunk to narrow making it look “pencil like.”

Seeds and fronds can be removed during pruning. They will take some of the palm’s “energy” if left on, but will not cause damage. Care should be taken when pruning, especially if the fronds have spines. Loppers will handle fronds on small species and young fronds on larger ones. Mature fronds will require a sharp hand or reciprocating saw. Chainsaws are not recommended as the fibrous material from the stems often clogs the chain. Ladders are not a safe place from which to prune mature (tall) palms. A safer approach is to secure a licensed arborist with a lift or cherry picker. If the palm has many years of dead leaves on it, make sure the professional pruner knows they must climb over the dead and prune downward from where the green leaves begin. Pruning from under the dead leaves can be dangerous as the dead leaves can collapse and injure or kill the pruner. Climbing devices must not be spikes that leave permanent holes in the trunk.

“Skinning” gives a popular smooth appearance to petioles or “boots.” After about 15 to 20 years, those on Washingtonia palms will begin to drop on their own. Pruning requires a large, sharp knife with a skilled touch to successfully remove the leaf petioles without cutting the pruner or damaging the tree. “Skinning” is performed only to change the look of the palm, and is not recommended by professional horticulturists. It does nothing to improve the health or longevity of the tree.

Over time, palm trees will form a “skirt” if left unpruned. This is simply the older fronds that have turned brown and are hanging down. They may be left, but over time may become a suitable nesting place for rodents and insects. Scorpions have been known to hide in palm tree skirts, so pruners beware! It is also a good habitat for bats that eat insects such as mosquitos.

More important is the fact that dead leaves burn! If near buildings such as homes they can be a fire hazard.





*Palm on the left is not “skinned” and hasn’t been pruned recently. The one on the right has been pruned and “skinned.”*

## Palms Suited to the St. George Area

In spite of the challenges mentioned, there are, in fact, palm trees (judging by their trunk size) that have been in the St. George area for 30 years or more. They have survived through some cold winter temperatures. When considering whether to plant palms, the following factors should be considered: 1) Selecting the correct species to plant is most important. 2) Winter low temperatures will generally be 5 degrees colder outside of the city. 3) Before making a selection, know how much space the mature palm will need. Consider the amount of room available for both height and spread. 4) Think about tree maintenance as the palms mature. Tall species such as the Washingtonias will need special equipment for pruning.

### California Fan Palm *Washingtonia filifera*

This is the largest of the palm species recommended and one of the most tolerant of cold temperatures. Maturing at about 35-40 feet high with a spread of 15 feet, plan for plenty of space when considering this palm.



## Fertilizer

Fertilizer should be applied after danger of frost is past. Soil temperatures should be 70 degrees F. or higher for palms to best utilize the fertilizer. Spring to early summer is the best time to fertilize. Fall fertilization may encourage growth at a time when trees should be going dormant. This may decrease their hardiness, making them more vulnerable to cold injury. Fertilizers recommended for palm trees should be used. In general, palms need more nitrogen and potassium than phosphorus. Hence, the first and third numbers on the fertilizer bag should be larger than the middle number (a 3-1-3 ratio; e.g., 12-4-12 or 21-7-21). Palms also benefit from the addition of micronutrients such as iron, magnesium, manganese, sulfur, zinc, copper, which will often be included in the same fertilizer. Before adding boron, test the soil as desert soils can be high in boron.



### **Mediterranean Fan Palm *Chamaerops humilis***

This palm forms clumps of several trunks coming from the base. The height will be about 12-15 feet with a spread of 6-8 feet or more. It makes a good patio or “pool side” tree. Consider removing spines from mature growth as they form. There is a beautiful blue form from the Atlas Mountains that is available.



### **Mexican Fan Palm *Washingtonia robusta***

These are tall, narrow trunked palms, often featured in travel magazines and advertisements due to their graceful appearance. They usually grow 40-50 feet tall, but may achieve 80 feet or more in some locations! Note: More Mexican Fan Palms were killed in the 2013-14 winter than any other palm.



### **Pindo Palm *Butia odorata* (Not pictured)**

The Pindo palm is a short, single trunked species growing to about 15 feet high with a spread of about 12-15 feet. It is a slow growing tree which forms edible fruit. Male and female flowers form on the same tree. The pseudo-bark has a distinctive look, giving this palm an attractive appearance. The Pindo palm may have nutrient deficiencies in the southwest due to high pH soils.

### **Windmill Palm *Trachycarpus fortunei***

This smaller palm is best suited for typical residential landscapes. It is the most cold hardy of palms grown in the St. George area. It may grow to 15 feet tall, but is most often observed at only 7-10 feet. Fronds are short and stiff giving the tree a “windmill” appearance. The trunk of this palm is covered in hairy fibers giving it a different look than other palms. Over time the fibers will shed off. There are other forms of this palm that are available including one from Bulgaria that is very cold hardy.





**Sago Palm *Cycas revoluta* (for indoor use or protected areas) (Not pictured)**

This is not a true palm. The fronds emerge close to the soil and have a fern-like appearance. It grows slowly and may achieve 6-8 feet in height. Keep out of direct afternoon sun. It is well suited to a pot or large planter. *Cycas revoluta* leaves will freeze at 18 F, but the plant will recover. Covering the plant with a large blanket will help protect the leaves.

Note: There are many types of palm trees that are not mentioned in this bulletin; i.e., the true Date Palm (*Phoenix dactylifera*), Canary Island Date Palm (*Phoenix canariensis*), Dwarf Sabal Palm (*Sabal minor*), etc. In general, the palm species included here are the only ones recommended for the St. George area. When searching for palms, if you cannot find a variety you are looking for locally, there are companies that sell seeds such as “Plants Delight” and “Rare Palm Seeds.” The serious palm grower may consider visiting the Extension office in Las Vegas, Nevada, where over 100 species and cultivars of palms are growing in the botanical gardens at 8050 Paradise Rd., Las Vegas NV, 89123 702-222-3130.



*Sale signs and stickers are not always accurate. Know the palm species before you buy it.*

## References

Arizona Landscape Palms

<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1021.pdf>

Star Nursery Palm Trees

<https://www.starnursery.com/palms>

50 Palms that are Grown or Should be Tried in Southern Nevada

<http://www.unce.unr.edu/publications/files/ho/2010/fs1064.pdf>

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