

Monumental Palms in Galicia (NW Spain)

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The green corner of Spain, Galicia, is an autonomous community and historic nationality under Spanish law. Galicia (Fig. 1) is located in the northwest of the Iberian Peninsula, north of Portugal. Its 29,574 km² of surface are divided into four provinces: A Coruña, Lugo, Ourense and Pontevedra.

Galicia has been inhabited since prehistoric times. The contributions of different peoples and periods have left their mark on this land, which, along with their own language, Galician (which has affinity with Portuguese), helped to shape its cultural heritage and national identity. The megalithic period, Celtic culture and the Roman period, for example, left important remains in the form of monuments, such as tombs, castros (Celtic settlements) and fortresses. Monuments such as the Tower of Hercules in A Coruña, the oldest coastal lighthouse in the world still in operation, and the Roman Wall of Lugo were both declared World Heritage Sites by

UNESCO. In the Middle Ages, Galicia was an independent kingdom. This and the Santiago pilgrimages, which contributed to cultural interchanges with the rest of Spain and other parts of Europe, contributed to forging the Galician cultural identity. Currently, three of the Santiago routes that run through Galicia (French Way, Northern Way and Primitive Way) to Santiago de Compostela have been declared World Heritage Sites.

Galicia is not a land of palms. In continental Europe, only the Mediterranean palm (*Chamaerops humilis*) grows naturally; however, its area of distribution does not reach Galician lands. The nearly 1500 km of Galician coast has a humid and temperate climate, suitable for many palms. Thus, palms are often grown as ornamental trees in many parks, public and private gardens in northern and western Galicia.

In this article, we study the role of heritage palm trees in Galicia. Detailed information is provided on the five palms currently included in the Galician Catalog of Monumental Trees, and also other palms that we believe may be part of this catalog in the near future.

Many European countries have long been concerned with cataloging and studying their monumental trees. However, there is not yet a common definition for these trees (Cannizzaro, 2014). Regione Marche (1989) considered that monumental trees "... are part

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1. Location of Galicia, in the NW of the Iberian Peninsula.

of the agricultural landscape, oak trees isolated or scattered groups in the country, tree-lined avenues or monumental oak, rows of poplars, elms, cypress and other species, hedges, forms of ancient cultivations in danger of extinction (such as tree-lined roads); isolated trees at crossroads, secular tall trees, of any species, the parks and gardens attached to houses, churches, castles and abbeys, even when of exotic species." According to Asan (2017), monumental trees have extraordinary physical dimensions related to their trunk circumference, diameter or height, great longevity or have interesting shapes caused by pathological formations on their trunk. Cannizzaro (2014) also included those trees which are part of local history and folklore, describing them as historical and cultural assets, natural monuments that form part of an inestimable heritage. Cannizzaro (2014) also considered that the presence of a veteran or monumental tree, is evidence of a long relationship between humans and landscapes of great environmental and scenic value, thus playing an important role due to historical aspects, local traditions and the maintenance of ecological balance.

Other literature, without establishing a definition of an outstanding tree, makes quite a few differentiations as to the classification of monumental trees. Helen Read (2000), defined a veteran tree as "a tree which is of interest biologically, culturally or aesthetically because of its age, size or condition." The Ancient Tree Guide (ATF 2008) considered an ancient tree "one which has passed beyond maturity and is old, or aged, in comparison with other trees of the same species." On the other hand, according to the practical handbook in use in the Ancient Tree Hunt (Owen & Alderman 2008, cited in Lonsdale 2013), an ancient tree is one which has all or

most of the following characteristics: having a biological, aesthetic or cultural interest due to its old age, a growth stage that is described as ancient or veteran or have a chronological age which is old relative to other individuals of the same species. It also introduces the following definitions:

- **Veteran.** This term describes a tree which has survived various rigors of life and thereby shows signs of ancientness, irrespective of its age. To qualify as a veteran, the tree should present crown retrenchment and signs of decay in the trunk, branches or roots, such as exposed dead wood or fungal fruit bodies.
- **Notable.** Trees qualifying for this category are usually very large but might not qualify as ancient or veteran. Notable trees have been defined as mature and often magnificent, standing out locally because they are larger than other trees around them, a definition shared by ATF (2008).
- **Champion.** This term is reserved for a tree which is the tallest or has the largest trunk girth of its kind in the UK (or a given region).
- **Heritage.** Trees answering any of the above descriptions could qualify for this category, together with others of special cultural or historical interest.

What do we consider as a monumental tree?

The Xunta de Galicia's Decree 67/2007 of 22 of March, creates the Galician's Heritage Tree Catalogue. Article 2 of the decree includes the following definition: Will be considered Heritage trees and vegetal formations, those of any species, both native and non-native, located on public or privately owned land, which deserve specific protection measures due to the exceptional characteristics of their size, dendrometry, age, rarity, historical or cultural significance, aesthetic, educational, environmental or scientific interest, or any other circumstance which makes them deserving special protection.

Methodology

During the period 2006–2009, field and office work was carried out for the elaboration of the "Galician Heritage Tree Catalog," and during the period 2017–2019, we worked on the "Revision of the Galician Heritage Tree Catalog" in the context of different contracts for the Ministry of the Environment and Spatial Planning and the University of Santiago de Compostela. All the trees and tree formations included in the "Galician Heritage



2. Canary Island date palm (*Phoenix canariensis*) grove at Pazo de Baión (Vilanova de Arousa, Pontevedra).

Tree Catalog" (Decree 67/2007), as well as other specimens and tree formations, were assessed in the field with the aim of drawing up a list of possible candidates to join the catalog in the future.

During the aforementioned periods, we proceeded to draw up inventories throughout the Autonomous Community of Galicia. The work was carried out in three stages:

- Gathering of information. In this stage, interviews with forestry and environmental agents, environmental associations, municipalities and, in general, people interested in the conservation of this interesting plant heritage were carried out. In addition, a review was carried out of all the existing published data on heritage trees, natural spaces, botanical catalogs, and any other documents that would provide information on the location of outstanding trees in Galicia.
- Design of an inventory sheet and inventory database.
- Analysis of fieldwork data and selection of the most outstanding specimens.

Measured parameters

All specimens and tree formations were georeferenced using GPS (Datum ETRS89), also noting the main descriptors of the site in the database. In addition, the following dendrometric measurements were taken:

- Total height (measuring the height of the trunk, i.e., from the base of the trunk to the point of insertion of the youngest leaves), using a Nikon 550 Forestry Pro laser hypsometer and the sine measurement method, performing two or more measurements to get an average.
- Trunk circumference (measured at 1.30 meters above the ground and perpendicular to the trunk axis) and basal trunk circumference, using tape measure.
- Canopy spread in those specimens for which it was possible and considered a relevant measure (tape measure, two perpendicular measurements).

Information was collected on the health status of each specimen, noting the recommended cultural and health treatments.



3. Canary Island date palm (*Phoenix canariensis*) and Mexican fan palms (*Washingtonia robusta*) at Pazo de Fefiñáns (Cambados, Pontevedra).

Palms in Galicia

Even though there is no native species of the family Arecaceae in Galicia, thousands of palm specimens are cultivated in towns, villages and cities: at fairgrounds, in the vicinity of religious buildings or in public and private gardens, etc. Among those specimens, several examples of a monumental nature can be found. The unique climatic conditions of Galicia, between the Eurosiberian and Mediterranean floristic regions, are favorable for the establishment of plant species from almost all climatic regions of the world. The provinces of A Coruña and Pontevedra, more populated and with a milder climate than the eastern ones (zones 9 to 11 of the USDA plant hardiness classification), have the greater number of monumental palm trees within Galicia. Standing out, due the presence of monumental plants (palm trees among them) are the following publicly owned gardens: San Carlos and Santa Margarida in A Coruña, the Pazo de Mariñán in Bergondo, the Paseo da Ferradura or the Alameda do Campo da Estrela in Santiago de Compostela, the Historical Artistic Garden of Padrón, the Park and Oak grove of Caldas de Reis, Alameda de Pontevedra, Paseo das Palmeiras and Pazo de Lourizán in Pontevedra, the Castle of Soutomaior's park in Soutomaior, and the Park and Pazo of Castrelos in Vigo. Standing out

among privately owned gardens are the pazo of Santa Cruz de Ribadulla in A Coruña, also the pazos of Oca, Torrecedeira, Torres Agrelo, Rubiáns and Baión (Fig. 2) in Pontevedra (Rodríguez Dacal & Izco Sevillano, 1994).

Among all these gardens, the Pazo de Castrelos (Vigo, Pontevedra) is worthy of attention. In this garden created probably by a Portuguese gardening firm around 1890 (Salinero Corral et al. 2018), the best collection of monumental palm trees in Galicia can be found. At Pazo de Castrelos there are several specimens which exceed 100 years-old, although none of them is listed as a monumental tree in the Galician Heritage Trees catalog. 100-year-old specimens, such as the jelly palm (*Butia odorata*, Fig. 4), the cabbage-tree palm (*Livistona australis*, Fig. 5), the Canary Island date palms (*Phoenix canariensis*) or the Senegal date palm (*Phoenix reclinata*), are planted along with other specimens that are around half a century old, like for example the Chusan palm (*Trachycarpus fortunei*). Most recent plantings include, date palm (*Phoenix dactylifera*), queen palm (*Syagrus romanzoffiana*), Alexandra or Australian royal palm (*Archontophoenix alexandrae*), kentia (*Howea fosteriana*), dwarf date palm (*Phoenix roebelenii*), Mexican fan palm (*Washingtonia robusta*) and its hybrid with the California fan palm (*W. filifera*),

Washingtonia × filibusta (Fernández Alonso & Rigueiro Rodríguez 2001, Fernández Alonso 2015).

Emigration to America, “to the Indies,” was significant from the mid-nineteenth century to the mid-twentieth century. Many “Indianos” (returned emigrants) who fared well, settled when they returned, in large mansions of characteristic architecture among beautiful gardens, in some cases with prominent palm trees (Salinero Corral et al.

2018). This fact was also highlighted by López Lillo and Sánchez de Lorenzo-Cáceres (2006), when they stated that “It can be noticed that the greater presence of exotic plant species in private collections are found in those places where its inhabitants have deeply felt the emigration.” When the “Indianos” returned from emigration, they usually planted in their homes broadleaf privet (*Ligustrum lucidum*), thuja (*Thuja* spp.), magnolias (*Magnolia grandiflora*) araucarias (*Araucaria heterophylla*) and mainly palms, especially the Canary Island

4. Pazo de Castrelos (Vigo, Pontevedra). At the center of the image the jelly palm (*Butia odorata*), at its left two specimens of Chusan palm (*Trachycarpus fortunei*) and at the right a Senegal date palm (*Phoenix reclinata*).





5. Cabbage-tree palm (*Livistona australis*) at Pazo de Castrelos (Vigo, Pontevedra).

Table 1. Location and dendrometric data of palms included in the Inventory of Outstanding Trees of Galicia (Xunta de Galicia, 1985).

| Species | Location | Province | Height (m) | Circumference (m) |
|----------------------------|------------------------------|------------|------------|-------------------|
| <i>Phoenix canariensis</i> | Mañón | A Coruña | 11.50 | 2.73 |
| <i>Phoenix canariensis</i> | Parque das Palmeiras (Fig.6) | Pontevedra | 17.50 | 3.07 |
| <i>Phoenix reclinata</i> | Xardín Histórico de Padrón | A Coruña | 9.00 | 12.96 |

date palm (*Phoenix canariensis*). These palm trees were expensive and required lots of care, and thus, they became a symbol of status and power. Gradually this trend spread to the public sphere, as the “Indianos” took the responsibility for building schools, communal laundry places, public fountains, hospitals, cinemas and markets (not provided by the governments of the time) and decorated these public spaces with palm trees.

Palms in the Galician heritage tree catalogues

The first work dedicated exclusively to trees in Galicia was published in 1953, when the forestry engineer Rafael Areses published “Nuestros Parques y Jardines, Contribución al Conocimiento de las Plantas Exóticas Cultivadas en España. Galicia.” This was the first volume of a collection, which aimed to catalog all the ornamental tree flora of Galicia. However, only the volume relating to the province of Pontevedra was published. Without being a specific document on monumental trees, the work cites some palm trees which are still in existence like for example, the California fan palms (*Washingtonia filifera*) of Pontevedra, the Canary Island date palms (*Phoenix canariensis*) and the Senegal date palm (*Phoenix reclinata*) of the Pazo de Castrelos, the butia (jelly palm) (*Butia odorata*, cited by Areses as “*Cocos erythrospatha*”) at the Paseo das Palmeiras, in Pontevedra, or the cabbage-tree palm of Salcedo. Others, such as the kentia (*Howea belmoreana*) from Vigo, have disappeared.

However, the first data on monumental trees in Galicia, in the framework of a work dedicated exclusively to heritage and monumental trees, appeared in 1974 when the National Institute for Nature Conservation (ICONA) (under the Ministry of Agriculture) issued a circular (14/1974), promoted by the forestry engineer D. Antonio López Lillo. The

circular was aimed at creating the Inventory of Outstanding Trees of Spain, in order to ensure their protection and conservation, “since some of these specimens were likely to disappear by felling, fires, pests and diseases, and mainly by ignorance of their value.” However, the response of ICONA’s regional delegations, in charge of gathering the information, was very heterogeneous, and the intended inventory did not materialize. The Territorial Delegation of Galicia sent data of 32 tree specimens, among which only one palm tree was found: the Senegalese date palm (*Phoenix reclinata*) in the Historical Garden of Padrón (A Coruña).

A decade later, in 1984, the General Directorate of Forestry and the Natural Environment (Xunta de Galicia’s Ministry of Agriculture, Fisheries and Food) hired a consultant to carry out the Inventory of Outstanding Trees of Galicia, a document which comes to light in 1985 and which included 260 entries, including three palm trees (Tab. 1). The authors of this work mentioned the obstacles they encountered trying to obtain information and the skepticism, fear and caution of many tree owners (Rigueiro Rodríguez et al. 2008).

Carlos Rodríguez Dacal and Jesús Izco Sevillano published in the year 2003, the book “Árboles Monumentales en el Patrimonio Cultural de Galicia,” in which they cited 345 specimens. Most of the monumental trees collected in this work are found in pazos (country houses), monasteries, castles, parks, and other places of historical and cultural interest. However, some of the specimens included are located in natural spaces. Several of the palm trees mentioned in this work have become part of the Galicia’s official catalog, and others, despite their outstanding dendrometry, have not been included in it (Tab. 2).

The current Catalog is created by means of Decree 67/2007, published on March 22 in the



6. Canary Island date palm (*Phoenix canariensis*) at Xardins de Vicenti also known as Parque das Palmeiras (Pontevedra).

Diario Oficial de Galicia. An annex to the Decree publishes the Catálogo Galego de Árbores e Formacións Senlleiras (Galician's Catalogue of Heritage Trees and Tree

Formations), which included 106 trees and 21 tree formations. It was an initial, provisional and open catalog. Among the species included are several palm trees (Tab. 3).

Table 2. Palms included in the book “Árboles Monumentales en el Patrimonio Cultural de Galicia” (Rodríguez Dacal & Izo Sevillano, 2003) which are not included in the Inventory of Outstanding Trees of Galicia (Decreto 67/2007).

| Palm name | Species | Location | Province |
|--|------------------------------|---------------------------------|------------|
| Palmeira raíña do Pazo de Lourizán | <i>Syagrus romanzoffiana</i> | Pazo de Lourizán | Pontevedra |
| Palmeira azul mexicana do Pazo de Santa Cruz | <i>Brahea armata</i> | Pazo de Santa Cruz de Ribadulla | A Coruña |
| Butias brasileiras olorosas do Pazo de Castrelos | <i>Butia odorata</i> | Pazo de Castrelos | Pontevedra |
| Kentias dos Xardíns de Méndez Núñez (Fig. 7) | <i>Howea forsteriana</i> | Xardíns de Méndez Núñez | A Coruña |
| Palmeiras datileiras do Pazo de Mariñán | <i>Phoenix dactylifera</i> | Pazo de Mariñán | A Coruña |
| Palmeira canaria do Mosteiro de Samos | <i>Phoenix canariensis</i> | Mosteiro de Samos | Lugo |
| Livistonia austral do Pazo de Torres de Agrelo | <i>Livistonia australis</i> | Pazo de Torres Agrelo | Pontevedra |
| Livistonia austral do Pazo de Castrelos | <i>Livistonia australis</i> | Pazo de Castrelos | Pontevedra |

In later years, the catalog was updated several times by the Galician public administration but failed to include any other specimens of Arecaceae.

The Spanish Society of Forest Sciences published a monograph in the year 2018 dedicated to monumental trees under the title “The Galician Catalogue of Monumental Trees: The Substitutes” (Bernárdez Villegas, Rigueiro Rodríguez & Mosquera-Losada, 2018). This

monograph included those trees and tree formations which, according to the authors, gather all the necessary characteristics in order to be considered monumental. Among the proposals are a pair of Canary Island date palms (*Phoenix canariensis*) from the Casa Grande de Lourenzá (Fig. 8) (Tab. 4).

In the year 2020, J. Gaspar Bernárdez Villegas defended his doctoral thesis under the direction of Antonio Rigueiro Rodríguez and

Table 3. Palms included in the Catálogo Galego de Árbores e Formacións Senlleiras (Decreto 67/2007) and their distribution by provinces.

| Palm name | Species | Location | Province |
|---|-----------------------------|---|----------|
| Cocoteiro de Chile do Pazo de Meirás | <i>Jubaea chilensis</i> | Pazo de Meirás | A Coruña |
| Palmeira Datileira do Mosteiro de Herbón | <i>Phoenix dactylifera</i> | Mosteiro de Herbón | A Coruña |
| Washingtonias Robustas do Pazo de Santa Cruz | <i>Washingtonia robusta</i> | Xardín do Pazo de Santa Cruz de Ribadulla | A Coruña |
| Palmeiral Canario dos Xardíns de Méndez Núñez | <i>Phoenix canariensis</i> | Xardíns de Méndez Núñez | A Coruña |
| Palmeira do Senegal do Xardín Artístico de Padrón | <i>Phoenix reclinata</i> | Xardín Artístico de Padrón | A Coruña |



7. *Kentia* (*Howea forsteriana*) at Xardíns de Méndez Núñez (A Coruña).

Rosa Mosquera Losada, with the title “As Árbores Senlleiras de Galicia. Diagnóstico da Situación Actual e Proposta de Liñas de Actuación.” The thesis was the result of the review and study of 1108 specimens and tree formations distributed throughout Galicia, including 18 palm trees or groups of palm trees which were considered of interest and which were not included in the official catalog or any of the aforementioned works (Tab. 4).

Palms in the current Galician catalogue of monumental trees

The codes indicated are those of the Galician Catalog of Heritage Trees (Decree 67/2007).

- Chilean Wine Palm at Pazo de Meiras (Code 55A) (*Jubaea chilensis*) (Fig. 13)

The Chilean wine palm in Pazo de Meirás grows in a raised planter that is 40 cm high but insufficient for the proper development of this wonderful palm. The space between the stem of the palm and the edge of the planter is colonized by small palms growing spontaneously from the seeds that fall from this monumental specimen. Its stem, with a circumference at the base of 3.5 m, widens to a few meters below the crown, a common feature in adult palms of this species. It exceeds 18 m in height, thus, the largest Chilean wine

Table 4. Location and main dendrometric data of the new monumental palm trees included in Bernárdez Villegas (2020).

| Species | Location | Province | Total height | Cicumference |
|--|--------------------------------------|------------|---------------------|---------------------|
| <i>Phoenix canariensis</i> | Pazo de Maniños-Maniños | A Coruña | 16.8m | 2.73m |
| <i>Phoenix canariensis</i> | Praza de Amboaxe | A Coruña | 17.9m | 2.10m |
| <i>Phoenix canariensis</i> | Ribeiras do Sor | A Coruña | 13.5m | 1.98m |
| <i>Phoenix canariensis</i> (2 specimens) | Praza Finca de Dona Gloria | A Coruña | A:17.6m; B:16.1m | A:2.40m; B:2.40m |
| <i>Phoenix canariensis</i> (24 specimens) | Pazo de Baión | Pontevedra | 17.9m (mean) | 2.04m (mean) |
| <i>Phoenix canariensis</i> (15 specimens) | Alameda de Noia | A Coruña | 16.2m (mean) | 2.06m (mean) |
| <i>Trachycarpus fortunei</i> | Parque de Castelaofene | A Coruña | 11.7m | 0.56m |
| <i>Trachycarpus fortunei</i> | Xardín da Rectoral de Barallobre | A Coruña | 10.6m | 0.50m |
| <i>Trachycarpus fortunei</i> | Praza de Amboaxe | A Coruña | 11.9m | 0.52m |
| <i>Trachycarpus fortunei</i> (2 specimens) | Pazo de Castrelos | Pontevedra | A:13.1m; B:11.8m | A:0.56m; B:0.54m |
| <i>Trachycarpus fortunei</i> (2 specimens) (Fig. 9) | Pazo de Mariñán | A Coruña | A:12.9m; B:12.8m | A:0.58m; B:0.51m |
| <i>Washingtonia robusta</i> (Fig. 10) | Xardíns do Posío | Ourense | 21.3m | 1.48m |
| <i>Phoenix canariensis</i> | Vila de Mondariz | Pontevedra | 13.7m | 1.70m |
| <i>Phoenix canariensis</i> | Parque das Palmeiras | Pontevedra | 21.1m | 1.73m |
| <i>Washingtonia filifera</i> (2 specimes) | Parque das Palmeiras | Pontevedra | A:17.8m; B:18.5m | A:1.15m; B:1.00m |
| <i>Washingtonia filifera</i> (Fig. 11) | Alameda da Praza de Compostela, Vigo | Pontevedra | 23.7m | 2.88m |
| <i>Washingtonia filifera</i> | Vilagarcía de Arousa | Pontevedra | 19.9m | 2.50m |
| <i>Washingtonia robusta</i> (2 specimens)(Fig. 12) | Pazo de Fefiñáns | Pontevedra | A:24.5m; B:22.4m | A:1.70m; B:1.85m |

palm in Galicia (Table 1) (Bernárdez Villegas, 2020).

• Date Palm at Herbón Monastery (Code. 66A) (*Phoenix dactylifera*) (Fig. 14)

Herbon Monastery's Date Palm has a straight stem that grows from an enlarged root mass at the base of the palm; however, in recent years its stem is leaning slightly to the southeast. It also hosts a small population of hare's-foot fern (*Davallia canariensis*), an epiphytic fern that climbs its stem. The crown

is sparsely populated with leaves and has a rather disordered appearance, with the presence of numerous dead leaves that spoil the appearance of this noble specimen (Tab. 5) (Bernárdez Villegas, 2020).

• Mexican Fan Palms at Pazo de Santa Cruz (Code. 106A) (*Washingtonia robusta*) (Fig. 15)

This is a pair of palms of similar size. Their great height makes them stand out among other trees in the garden. Their trunks have wide bases and grow vertically. The crowns,



8. Image of one of the Canary Island palm trees (*Phoenix canariensis*) at Casa Grande de Lourenzá (Lourenzá, Lugo).

formed at a height just above 24 m, consist of the classic tuft of large fan leaves (Tab. 5) (Bernárdez Villegas, 2020).

- Canary Island Date Palm Grove at Xardíns de Méndez Núñez (Code. 13F) (*Phoenix canariensis*) (Fig. 16)

This palm grove consists of two different groups of palms, those located along the boulevard and those in the rose garden. There are 71 Canary Island date palm trees in total in the two groups. It is a fairly homogeneous group in terms of age, size and shape of the specimens. The stems arise from a wide basal

root mass. They grow straight to a height which averages 25 m. The crowns are formed at this height and are composed of a large number of leaves. The palms show a lot of leafiness and good health (Tab. 5) (Bernárdez Villegas, 2020).

- Senegal Date Palm at Xardín Artístico de Padrón (Code. 14F) (*Phoenix reclinata*) (Fig. 17)

This beautiful example of a multi-stem palm tree is without a doubt one of the most impressive Senegal date palms within the Spanish territory. Several stems grow from its base, forming a large impenetrable mass of stems and leaves. It is difficult to know how many stems sprout from a common point, but more than 20 have been counted, which are almost free of leaves to their apex. Its leaves are collected by neighbors for Palm Sunday (Tab. 5) (Bernárdez Villegas, 2020).

Other palm species cultivated in Galicia

86 species of palm trees are currently mentioned in Galicia, among which the following deserve to be highlighted:

- The genus *Archontophoenix* is represented by the species *A. alexandrae* and *A. cunninghamiana*, with specimens up to 7 m in height.
- *Bismarckia nobilis*, from Madagascar, is starting to be grown in private collections and public places, such as the specimen in the municipality of Marín (Pontevedra).
- Some *Brahea armata* specimens are known to be up to 40 years old and up to 4 m in height, such as the one at the Forest Research Center of Lourizán (Pontevedra) (Fernández Alonso, 2015). Other species of the same genus, such as *B. brandegeei* and *B. edulis*, have been planted in recent years in several private collections.
- There are at least two dozen adult specimens of *Butia odorata* scattered over coastal gardens and boulevards. Several of these specimens are already 100 years old, such the one at the Alameda de A Guarda (Pontevedra), planted in 1885 and now 5.5 m tall (Fernández Alonso, 2015), or that at Parque de Castrelos (Vigo, Pontevedra), from the same period, which is nearly 8 m tall (Fernández Alonso, 2015). A specimen within the same genus, *B. yatay*, planted around 1980 in the grounds of a commercial nursery in Tomiño (Pontevedra), has already reached 4 m in height.
- Species of the genus *Chamaedorea*, are widely represented as indoor plants, with species such



9. Chusan palms (*Trachycarpus fortunei*) at Pazo de Mariñán (Bergondo, A Coruña).

as *C. elegans*, *C. metallica*, *C. microspadix* or *C. radicalis*. However, they are also occasionally planted outdoors, thriving in localities with mild climates.

- The European fan palm, *Chamaerops humilis*, a multi-stem palm which is common in cultivation in parks and gardens.
- *Dypsis lutescens* is common as an indoor plant, rarely grown outdoors, its planting limited to coastal areas.
- *Howea forsteriana* is common as an indoor plant. However, it is not difficult to find it planted outdoors in coastal areas, as for example, in the gardens of Méndez Núñez in A Coruña or at the Maristas School in Vigo (Pontevedra). *Howea belmoreana* is less common in cultivation, being grown outdoors at the Jesuit School, also in Vigo.
- There are several specimens of *Livistona chinensis* scattered along coastal gardens. The 100-year-old specimens at the Pazo de Torrecedeira, in Redondela (Pontevedra) reach 8 m in height.

- *Phoenix roebelenii* is occasionally planted outdoors, with specimens reaching 2 m tall. Other species, such as *P. sylvestris* and *P. theophrasti*, have been incorporated recently into private plant collections.
- *Rhapis excelsa* is not common in cultivation, either indoors or outdoors; however, it thrives outdoors when planted in coastal regions.
- Both *Rhopalostylis baueri* and *R. sapida* have been incorporated for a few years into several private collections, but the plants are small.
- Both *Sabal minor* and *S. palmetto* have been growing outdoors in a few private collections for the past few years; other species of the genus are cultivated only in a couple of private collections.
- The genus *Trachycarpus* is widely represented in Galicia, *T. fortunei* being the most common palm in Galicia after *Phoenix canariensis*. Other species such as *T. latisectus*, *T. martianus*, *T. nanus*, *T. oreophilus*, *T. princeps* and *T. ukhrulensis* have been added to a few private collections in recent years.



10 (left). Mexican fan palm (*Washingtonia robusta*) at Xardíns do Posío (Ourense). 11 (right). California fan palm (*Washingtonia filifera*) at Compostela Boulevard (Vigo, Pontevedra).

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LITERATURE CITED

ANÓNIMO. 1885. Los árboles gigantes de California. *Revista Popular Conocimientos Útiles* 240: 46–47.

ASAN, Ü. 2017. Mystical and holistic aspect of the monumental trees, and their importance for ecotourism. *International Symposium on New Horizons in Forestry*. Turquía.

ANCIENT TREE FORUM (ATF). 2008. *Ancient Tree Guide*. No. 4: What are ancient, veteran and other trees of special interest? The Woodland Trust, UK. 7 pp.

BERNÁRDEZ VILLEGAS, J. G., A. RIGUEIRO RODRÍGUEZ AND R. MOSQUERA-LOSADA. 2018. El Catálogo Gallego de Árboles Monumentales: los suplentes. *Cuadernos de la Sociedad Española de Ciencias Forestales* 44: 1–10.

BERNÁRDEZ VILLEGAS, J. G. 2020. *As Árbores Senlleiras de Galicia. Diagnóstico da Situación Actual e Proposta de Liñas de Actuación*. Memoria de Tese de Doutoramento. Universidade de Santiago de Compostela (estudio inédito).

CANNIZZARO, S. 2014. The role of monumental trees in defining local identity and in tourism. A case study in the Marches Region. *Geoprogess Journal* 1: 29–48.

CASTEL, C. 1885. Los árboles gigantes. *Revista Montes* 194: 92–96

DIARIO OFICIAL DE GALICIA. 2007. Decreto 67/2007, do 22 de Marzo, polo que se regula o Catálogo Galego de Árbores e Formacións



12. Mexican fan palm (*Washingtonia robusta*) at Pazo de Fefiñáns (Cambados, Pontevedra).

Senlleiras. nº 74: 6.136 6.141. Consellería de Medio Ambiente e Desenvolvemento Sostible. Xunta de Galicia.

FERNÁNDEZ ALONSO, J. AND A. RIGUEIRO RODRÍGUEZ. 2001. Catálogo das Árbores Singulares do Concello de Vigo. Ed. Concello de Vigo.

FERNÁNDEZ ALONSO, X.I. 2015. Catálogo da Flora Ornamental da Provincia de Pontevedra. Memoria de Tese de Doutoramento. Universidade de Santiago de Compostela (estudio inédito).

LONSDALE, D. (ed.). 2013. Ancient and Other Veteran Trees; Further Guidance on



13 (facing page). Chilean wine palm (*Jubaea chilensis*) at Pazo de Meirás (Sada, A Coruña).



14. Date palm (*Phoenix dactylifera*) at Mosteiro de Herbón (Padrón, A Coruña).



15. Mexican fan palms (*Washingtonia robusta*) at Pazo de Santa Cruz de Ribadulla (Vedra, A Coruña).

Management. The Tree Council, London 212 pp.

LÓPEZ LILLO, A. AND J.M. SÁNCHEZ DE LORENZO-CÁCERES. 2006. Árboles en España. Manual de identificación. Ed. Mundi-Prensa. Madrid.

READ, H. 2000. Veteran Trees: A Guide to Good Management. Ancient Tree Forum. UK.

REGIONE MARCHE. 1989. PPAR-Piano Paesistico Ambientale Regionale 1989. <http://www.ambiente.marche.it/Territorio/Paesaggio/PPAR-PianoPaesisticoAmbientaleRegionale.aspx>. Accessed 20.10.2019.

RODRÍGUEZ DACAL, C. AND J. IZCO SEVILLANO. 1994. Pazos de Galicia. Jardines y Plantas. Consellería de Presidencia y Administración Pública. Xunta de Galicia. Santiago de Compostela.

RODRÍGUEZ DACAL, C. AND J. IZCO SEVILLANO. 2003. Árboles Monumentales en el Patrimonio Cultural de Galicia. 2 Tomos. Consellería de Cultura, Comunicación Social e Turismo. Xunta de Galicia.

SALINERO CORRAL, C., A. BARROS MARTÍNEZ, G. BERNÁRDEZ VILLEGAS, X. FERNÁNDEZ ALONSO AND A. RIGUEIRO RODRÍGUEZ. 2019. Xardíns históricos de Pontevedra. Un paseo por 20 xardíns singulares da provincia. Ed. Deputación de Pontevedra.

XUNTA DE GALICIA. 1985. Inventario de Árboles Sobresalientes de Galicia (Inéd.). 3 Tomos. Dirección Xeral do Forestal e do Medio Ambiente Natural. Consellería de Agricultura, Pesca e Alimentación. Santiago de Compostela.



16. Canary Island date palms (*Phoenix canariensis*) at Xardíns de Méndez Núñez (A Coruña).



17. Senegal date palm (*Phoenix reclinata*) at Xardín Artístico de Padrón (Padrón, A Coruña).

Table 5. Dendrometric data for notable palms.

| Species | Location | Province | Coordinates UTM (X, Y; ETRS89 zone 29) | Total height (m) | Stem circumference (m) |
|-----------------------------|--|----------|---|------------------|------------------------|
| <i>Phoenix canariensis</i> | Casa de Oia (Casa Grande de Lourenzá) | Lugo | 637708;4814438 | 22.70; 23.80 | 2.40; 3.40 |
| <i>Jubaea chilensis</i> | Pazo de Meirás | A Coruña | 556944;4800747 | 18.20 | 3.67 |
| <i>Phoenix dactylifera</i> | Mosteiro de Herbón | A Coruña | 530307;4731368 | 19.50 | 1.27 |
| <i>Washingtonia robusta</i> | Pazo de Santa Cruz de Ribadulla | A Coruña | 547123;4735670 | 26.7; 27.20 | 1.91; 1.96 |
| <i>Phoenix canariensis</i> | Xardíns de Méndez Núñez | A Coruña | 548465;4801858 | 25.80; 26.60 | 3.75; 3.42 |
| <i>Phoenix reclinata</i> | Xardín Artístico de Padrón | A Coruña | 528102;4732057 | 14.10 | 14.10 |