

LISTS OF SPECIES

Magnoliophyta species of *restinga*, state of Pernambuco, Brazil.

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Abstract: *Restinga* vegetation occurs along the entire coast of Brazil. The 187 km of coastline of the state of Pernambuco demonstrates a diversity of habitats, such as beaches, dunes, and *restingas*. The present study sought to elaborate a checklist of the phanerogamic species found there. The species listed were compiled from surveys undertaken between 1951 and 2007, as well as from herbaria collections in that state. A total of 477 species distributed among 303 genera and 95 families were encountered. The families with the greatest numbers of species were Poaceae (39 species), Fabaceae (34), Cyperaceae (26), Euphorbiaceae (25), Myrtaceae (24), Rubiaceae (20), Caesalpinaceae (17), Mimosaceae (16), Asteraceae (14), Orchidaceae (14), Bromeliaceae (9), Boraginaceae (8), Malvaceae (8), Solanaceae (8), and Annonaceae, Araceae, Chrysobalanaceae, Malpighiaceae, and Melastomataceae (7 each). Approximately 60 % of the species were common to other *restinga* areas in northeastern Brazil, and 39.3 % were restricted to the coast of Pernambuco.

Introduction

Restingas are composed of a mosaic of physiognomically distinct vegetation communities growing on recent marine sediments that are subject to both marine and freshwater influences and demonstrate significant ecological diversity (Sugiyama 1998).

Restingas occur over most of the Brazilian coastline, and the state of Pernambuco, with 187 km of coast, possesses a diversity of habitats, such as beaches, dunes, and the *restingas* strictly (Andrade-Lima 1960). However, very little of the original landscape is still intact, and these environments and their component biodiversity are fast disappearing as a result of anthropogenic influences, even though these areas are protected through federal laws (Araujo and Henriques 1984).

There is no currently published list of the *restinga* species for Pernambuco or any information concerning the physiognomic variations that exist there, only a number of spatially distinct studies of the local flora. Zickel et al. (2004), however, have published data concerning the floras of the

restinga vegetation in that state, together with a short compilation of the principal studies undertaken in other coastal regions of northeastern Brazil. Due to the continual loss of habitat within the *restinga* ecosystems of Pernambuco, it becomes all the more important to study and document the remaining areas.

As such, the goal of the present study was to construct a checklist of the phanerogamic species recorded in the *restingas* of the state of Pernambuco, Brazil.

Materials and methods

Pernambuco is one of nine states in the northeastern region of Brazil, and it occupies an area of approximately 98,281 km² (IBGE 2000) (Figure 1).

The species listed here were compiled from surveys made in diverse areas along the coast of the state of Pernambuco between 1951 and 2007, and includes information gathered from collections housed at the IPA, PEUFR, and UFP herbaria (see Holmgren and Holmgren 1998), in

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that state. The list of species was compiled of different municipalities of the *restinga* in Pernambuco (Table 1). However, the registration of the species in the *restinga* of Goiana, Itapissuma, Olinda, and São José da Coroa Grande are not defined by a unique collection point.



Figure 1. Map of Brazil; in detail the state of Pernambuco showing sites (black circle) surveys made along the Atlantic coast.

The checklist classifies the genera by order of their families, followed by a list of species. The classification system used was based on Cronquist (1988). Current species names and new synonyms were confirmed by consulting the MOBOT data base (2007) as well as the specialized literature for some groups.

Species distribution was considered ample when the species occurred in more than one *restinga* site, and restricted when they were listed for only a single area. The surveys consulted included: Andrade-Lima (1951; 1953; 1979), Cantarelli (2003), Lira (2004), Leite and Andrade (2004), Almeida Jr. (2006), Sacramento et al. (in press), for the state of Pernambuco; Silva (1972), Esteves (1980), Rocha (1984) for the state of Alagoas;

Pinto et al. (1984), Britto et al. (1993), Meira-Neto et al. (2005), Viana et al. (2006) for the state of Bahia; Matias and Nunes (2001), Matias and Silva (2001) for the state of Ceará; Oliveira-Filho and Carvalho (1993), Oliveira-Filho (1993), Pontes (2000) for the state of Paraíba; Cabral-Freire and Monteiro (1993) for the state of Maranhão; and Tavares (1960), Freire (1990), Trindade (1991), Almeida et al. (2006) and Almeida Jr. and Zickel (unpublished data), for the state of Rio Grande do Norte. The states of Piauí and Sergipe do not own bibliographical data about their *restinga* flora.

Table 1. Municipalities list where were compiled the species of the *restingas* of Pernambuco.

Municipalities	Coordinates
Cabo de Santo Agostinho	08°07'30" S, 35°00'55" W
Goiana	07°33'38" S, 35°00'09" W
Ipojuca	08°31'48" S, 35°01'05" W
Itamaracá	07°45'00" S, 34°49'30" W
Itapissuma	07°46'26" S, 34°53'27" W
Olinda	08°01'42" S, 34°51'42" W
Paulista	07°56'24" S, 34°52'46" W
Recife	08°06'02" S, 34°52'48" W
São José da Coroa Grande	08°53'52" S, 35°08'52" W
Sirinhaém	08°35'27" S, 35°06'58" W
Tamandaré	08°47'20" S, 35°06'45" W

Results and discussion

The list of phanerogamic species of the *restinga* areas of Pernambuco State included 477 species distributed among 303 genera and 94 families (Table 2). The most species rich families were Poaceae (39), Fabaceae (34), Cyperaceae (26), Euphorbiaceae (25), Myrtaceae (24), Rubiaceae (20), Caesalpiniaceae (17), Mimosaceae (16), Asteraceae (14), Orchidaceae (14), Bromeliaceae (9), Boraginaceae (8), Malvaceae (8), Solanaceae (8), and Annonaceae, Araceae, Chrysobalanaceae, Malpighiaceae and Melastomataceae (7 each), totaling 62 % of the total number of species encountered.

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Table 2. List of phanerogamic species of the *restinga* areas of the state of Pernambuco, from 1951 to february 2007. ▲ = Species with ample distribution within the *restingas* of northeastern Brazil; * = Species cited for Rio de Janeiro and Espírito Santo states (Pereira and Araujo 2000).

Families/ Species

Acanthaceae

- Pseuderanthemum atropurpureum* (W. Bull) Radlk.
Ruellia asperula (Mart. & Nees) Lindau
Ruellia geminiflora Kunth

Aizoaceae

- Sesuvium portulacastrum* (L.) L.*▲

Amaranthaceae

- Alternanthera philoxeroides* (Mart.) Griseb.▲
Iresine portulacoides (A. St.-Hil.) Moq.▲
Philoxerus vermicularis (L.) R. Br. ex Sm.▲

Anacardiaceae

- Anacardium occidentale* L.*▲
Schinus terebinthifolius Raddi.*▲
Spondias mombin L.
Tapirira guianensis Aubl.*▲

Annonaceae

- Annona crassiflora* Mart.
Annona glabra L.*▲
Annona aff. *montana* Macfad.
Duguetia gardneriana Mart.▲
Rollinia pickelli Diels
Xylopia frutescens Aubl.▲
Xylopia laevigata (Mart.) R. E. Fr.*▲

Apiaceae

- Hydrocotyle umbellata* L.

Apocynaceae

- Catharanthus roseus* (L.) G. Don▲
Hancornia speciosa Gomes*▲
Himatanthus phagedaenicus (Mart.) Woodson*▲
Lochnera rosea (L.) Rchb. ex Endl.
Mandevilla moricandiana (A.DC.) Woodson*▲
Mandevilla scabra (Hoffmanns. ex Roem. & Schult.) K. Schum.▲

Araceae

- Anthurium affine* Schott▲
Montrichardia linifera (Arruda) Schott*
Philodendron acutatum Schott
Philodendron imbe Schott▲
Pistia stratiotes L.
Rhodospatha latifolia Poepp.
Zomicarpa pythonium Schott

Araliaceae

- Schefflera morototoni* (Aubl.) Maguire, Steyererm. & Frodin*

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Table 2. Continuation.

Areaceae

- Acrocomia intumescens* Drude[▲]
Bactris humilis (Wallace) Burret.*
Desmoncus orthacanthos Mart.*[▲]
Elaeis guineensis Jacq.[▲]
Syagrus schizophylla (Mart.) Glassman*[▲]

Aristolochiaceae

- Howardia trilobata* (L.) Klotzsch[▲]

Asclepiadaceae

- Calotropis procera* (Ailt.) W.T. Ailt.[▲]
Ditassa crassifolia Decne
Matelea maritima ssp. *ganglinosa* (Vell.) Font.*[▲]

Asteraceae

- Acanthospermum hispidum* DC.[▲]
Ambrosia microcephala DC.[▲]
Aspilia martii Baker[▲]
Bidens pilosa L.
Conocliniopsis prasiifolia (DC.) R.M. King & H. Rob.[▲]
Conyza bonariensis (L.) Cronquist[▲]
Elephantopus hirtiflorus DC.[▲]
Emilia sonchifolia (L.) DC.[▲]
Mikania obovata DC.[▲]
Platypodanthera melissaefolia (DC.) R. M. King & H. Rob.
Rolandra argentea Rottb.
Synedrella nodiflora (L.) Gaertn.
Wedelia paludosa DC.[▲]
Wedelia trilobata (L.) Hitchc.[▲]

Bignoniaceae

- Arrabidaea conjugata* (Vell.) Mart.*[▲]
Lundia cordata (Vell.) A. DC.*[▲]
Tabebuia chrysotricha (Mart. ex A. DC.) Standl.*[▲]
Tabebuia roseoalba (Ridl.) Sandwith*[▲]

Boraginaceae

- Cordia multispicata* Cham.[▲]
Cordia sellowiana Cham.*
Cordia superba Cham.[▲]
Cordia toqueve Aubl.
Heliotropium elongatum Hoffm. ex Roem. & Schult.
Tournefortia candidula (Miers) I.M. Johnst.[▲]
Tournefortia subsessilis Cham.
Varronia verbenacea (DC.) Borhidi[▲]

Bromeliaceae

- Aechmea aquilega* (Salisb.) Griseb.[▲]
Aechmea muricata (Arruda da Câmara) L.B. Sm.
Aechmea tomentosa Mez
Bromelia karatas L.
Cryptanthus burle-marxii Leme
Hohenbergia ramageana Mez
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Table 2. Continuation.

<i>Hohenbergia ridleyi</i> (Baker) Mez.▲
<i>Portea leptantha</i> Harms
<i>Portea petropolitana</i> (Wawra) Mez.*
Burseraceae
<i>Protium bahianum</i> Daly▲
<i>Protium heptaphyllum</i> (Aubl.) Marchand*▲
Cactaceae
<i>Cereus fernambucensis</i> Lem.*▲
<i>Cereus jamacaru</i> DC.▲
<i>Melocactus violaceus</i> Pfeiff.*▲
<i>Pilosocereus hapalacanthus</i> (Werderm.) Byles & G.D. Rowley▲
Caesalpiniaceae
<i>Apuleia leiocarpa</i> (Vogel) J. F. Macbr.▲
<i>Binaria rubiginosa</i> (Bong.) Schmitz▲
<i>Caesalpinia bonduc</i> (L.) Roxb.
<i>Cassia coluteoides</i> Collad.
<i>Cassia hoffmannseggii</i> Mart. ex Benth.
<i>Chamaecrista apoucouita</i> (Aubl.) H.S. Irwin & Barneby▲
<i>Chamaecrista ensiformis</i> (Vell.) H.S. Irwin & Barneby*
<i>Chamaecrista flexuosa</i> (L.) Greene▲
<i>Chamaecrista ramosa</i> (Vogel) H.S. Irwin & Barneby*▲
<i>Chamaecrista repens</i> (Vogel) H. S. Irwin & Barneby
<i>Chamaecrista rotundifolia</i> (Pers.) Greene▲
<i>Hymenaea martiana</i> Hayne
<i>Senna alata</i> (L.) Roxb.▲
<i>Senna macranthera</i> (DC. ex Collad.) H.S. Irwin & Barneby
<i>Senna obtusifolia</i> (L.) H.S. Irwin & Barneby
<i>Senna tora</i> (L.) Roxb.▲
<i>Sericeocassia uniflora</i> (Mill.) Britton▲
Campanulaceae
<i>Cephalostigma bahiense</i> A. DC.
Capparaceae
<i>Capparis flexuosa</i> (L.) L.*▲
<i>Cleome longicarpa</i> Eltis
<i>Cleome spinosa</i> Jacq.▲
<i>Hemiscola aculeata</i> (L.) Raf.▲
Cecropiaceae
<i>Cecropia pachystachya</i> Trécul*▲
Celastraceae
<i>Maytenus distichophylla</i> Mart.*▲
Chrysobalanaceae
<i>Chrysobalanus icaco</i> L.*▲
<i>Couepia impressa</i> Prance▲
<i>Couepia rufa</i> Ducke.▲
<i>Hirtella racemosa</i> Lam.▲
<i>Licania</i> aff. <i>dealbata</i> Hook. F.
<i>Licania rigida</i> Benth.
<i>Licania tomentosa</i> (Benth.) Fritsch▲

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Clusiaceae

- Calophyllum brasiliense* Cambess.*[▲]
Clusia nemorosa G. Mey.*[▲]
Clusia paralicola G. Mariz
Rheedia macrophylla (Mart.) Planch. & Triana
Symphonia globulifera L. f.*[▲]
Vismia guianensis (Aubl.) Pers.*[▲]

Combretaceae

- Buchenavia capitata* (Vahl) Eichler*[▲]
Conocarpus erectus L.*[▲]

Commelinaceae

- Commelina erecta* L.*[▲]
Commelina obliqua Vahl.*[▲]
Dichorisandra albo-marginata Linden
Dichorisandra glaziovii Taub.

Convolvulaceae

- Convolvulus littoralis* L.*[▲]
Ipomoea asarifolia (Desr.) Roem. & Schult.*[▲]
Ipomoea imperati (Vahl) Griseb.*
Ipomoea marcellia Meisn.
Ipomoea pes-caprae (L.) R. Br.*[▲]
Merremia umbellata (L.) Hallier f.

Costaceae

- Costus spiralis* Jack*[▲]

Crassulaceae

- Kalanchoe pinnata* (Lam.) Pers

Cyperaceae

- Abildgaardia scirpoides* Nees*[▲]
Bulbostylis capillaris (L.) C.B. Clarke*[▲]
Cyperus aggregatus (Willd.) Endl.*[▲]
Cyperus articulatus L.*
Cyperus flavus J. Presl & C. Presl
Cyperus hermaphroditus (Jacq.) Standl.
Cyperus laxus Lam.
Cyperus ligularis L.*[▲]
Cyperus marginatus Thunb.
Cyperus meyenianus Kunth*[▲]
Cyperus sphacelatus Rottb.
Cyperus surinamensis Rottb.*[▲]
Eleocharis geniculata (L.) Roem. & Schult.*[▲]
Eleocharis interstincta (Vahl.) R. et Schult.*[▲]
Fimbristylis cymosa (Lam.) R.Br.*[▲]
Fimbristylis cymosa subsp. *spathacea* (Roth) T. Koyama*[▲]
Fimbristylis diphylla (Retz.) Vahl
Fimbristylis glomerata Boeck.*[▲]
Fuirena umbellata Rottb.*
Pycneus pelophylus (Ridl.) C.B. Clarke
Pycneus polystachyos (Rottb.) P. Beauv.*[▲]
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Table 2. Continuation.

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- Remirea maritima* Aubl.*[▲]
Rhynchospora barbata (Vahl.) Kunth.[▲]
Rhynchospora riparia (Nees) Boeck.[▲]
Rhynchospora tenuis Willd. ex Link*[▲]
Scleria bracteata Cav.[▲]
- Dilleniaceae**
Curatella americana L.[▲]
Doliocarpus dentatus (Aubl.) Standl.
Tetracera breyniana Schltld.*[▲]
- Dioscoreaceae**
Dioscorea leptostachya Gardner*
Dioscorea polygonoides Humb. & Bonpl. ex Willd.*
- Elaeocarpaceae**
Sloanea guianensis (Aubl.) Benth.*
- Ericaceae**
Gaylussacia brasiliensis (Spreng.) Meisn.*[▲]
- Eriocaulaceae**
Eriocaulon palustre Salzm. ex. Steud.
Paepalanthus bifidus (Schrader) Kunth*[▲]
Paepalanthus tortilis (Bong.) Koern.*
- Erythroxylaceae**
Erythroxylum citrifolium A. St.-Hill
Erythroxylum columbinum Mart.
Erythroxylum passerinum Mart.*[▲]
Erythroxylum pungens O.E. Schulz
Erythroxylum suberosum A. St.-Hil.
Erythroxylum vacciniifolium Mart.
- Euphorbiaceae**
Caperonia castaneifolia (L.) A. St.-Hil.
Chaetocarpus myrsinites Baill.*[▲]
Chamaesyce brasiliensis (Lam.) Small[▲]
Chamaesyce hyssopifolia (L.) Small[▲]
Chamaesyce prostrata (Aiton) Small[▲]
Chamaesyce thymifolia (L.) Millsp.[▲]
Cnidoscolus urens (L.) Arthur[▲]
Croton brasiliensis Mart. ex Klotzsch*[▲]
Croton hirtus L'Hér.
Croton klotzschii (Didr.) Baill.*[▲]
Croton lobatus L.[▲]
Croton sellowii Baill.[▲]
Dalechampia scandens L.[▲]
Dalechampia tiliifolia var. *ficifolia* (Lam.) Kuntze*[▲]
Euphorbia pilulifera var. *discolor* Engelm.[▲]
Jatropha mollissima (Pohl) Baill.[▲]
Mycrostachys corniculata (Vahl.) Griseb.*[▲]
Pera ferruginea (Schott) Müll. Arg.[▲]
Pera glabrata (Schott) Poepp. ex Baill.*[▲]
Phyllanthus acidus (L.) Skeels
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Table 2. Continuation.

<i>Phyllanthus minutulus</i> Müll. Arg.
<i>Phyllanthus niruri</i> L.▲
<i>Pogonophora schomburgkiana</i> Miers ex Benth.▲
<i>Poinsettia heterophylla</i> (L.) Klotzsch & Garcke
<i>Ricinus communis</i> L.▲
Fabaceae
<i>Abrus precatorius</i> L.▲
<i>Aeschynomene sensitiva</i> Sw.*
<i>Andira fraxinifolia</i> Benth.*▲
<i>Andira nitida</i> Mart. ex Benth.*▲
<i>Canavalia brasiliensis</i> Mart. ex Benth.▲
<i>Canavalia obtusifolia</i> DC.▲
<i>Canavalia rosea</i> (Sw.) DC.*▲
<i>Centrosema brasilianum</i> (L.) Benth.▲
<i>Clitoria cajanifolia</i> (C. Presl) Benth.
<i>Clitoria laurifolia</i> Poir.▲
<i>Crotalaria pallida</i> Aiton▲
<i>Crotalaria retusa</i> L.▲
<i>Dalbergia ecastaphyllum</i> (L.) Taub.*▲
<i>Dalbergia heptaphylla</i> Poir.
<i>Desmodium barbatum</i> (L.) Benth.▲
<i>Desmodium incanum</i> DC.▲
<i>Dioclea bicolor</i> Benth.
<i>Erythrina velutina</i> Willd.▲
<i>Hymenolobium alagoanum</i> Ducke.▲
<i>Indigofera campestris</i> Bong.ex Benth.
<i>Indigofera suffruticosa</i> Mill.▲
<i>Machaerium angustifolium</i> Vog.
<i>Macroptilium gracile</i> (Poepp. Ex. Benth.) Urb.▲
<i>Periandra mediterranea</i> (Vell.) Taub.▲
<i>Rhynchosia phaseoloides</i> (Sw.) DC.*▲
<i>Sesbania exasperatus</i> (Kunth) Rydb.
<i>Sophora tomentosa</i> L.*▲
<i>Swartzia pickelii</i> Killip ex Ducke▲
<i>Stylosanthes angustifolia</i> Vogel
<i>Stylosanthes gracilis</i> Kunth
<i>Stylosanthes guianensis</i> (Subl.) Sw.▲
<i>Stylosanthes viscosa</i> (L.) Sw.▲
<i>Vigna candida</i> (Vell.) Maréchal, Mascherpa & Stainier*
<i>Zornia diphylla</i> (L.) Pers.▲
Flacourtiaceae
<i>Casearia javitensis</i> Kunth
<i>Casearia ramiflora</i> Vahl.
<i>Casearia sylvestris</i> Sw.▲
Gentianaceae
<i>Schultesia guianensis</i> (Aubl.) Malme*

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Heliconiaceae

- Heliconia angustifolia* Hook.
Heliconia psittacorum L. F.*[▲]
Heliconia rostrata Ruiz & Pav.

Humiriaceae

- Humiria balsamifera* Aubl.*[▲]
Sacoglottis mattogrossensis Malme*[▲]

Icacinaceae

- Emmotum fagifolium* Desv. ex Ham.

Iridaceae

- Cipura paludosa* Aubl.
Neomarica caerulea (Ker Gawl.) Sprague[▲]

Lamiaceae

- Hyptis fruticosa* Salzm. ex Benth.[▲]
Hyptis lanceolata Poir.
Hyptis suaveolens (L.) Poit.
Ocimum gratissimum L.

Lauraceae

- Cassytha americana* Ness.[▲]
Cassytha filiformis L.*[▲]
Nectandra cuspidata Nees & Mart.
Ocotea duckei Vattimo[▲]
Ocotea gardneri (Meisn.) Mez[▲]
Ocotea glomerata (Ness) Mez

Lecythydaceae

- Eschweilera ovata* (Cambess.) Miers*[▲]
Eschweilera luschnathii (O. Berg) Miers[▲]
Gustavia augusta L.[▲]

Lentibulariaceae

- Utricularia pusilla* Vahl.[▲]

Liliaceae

- Crinum procerum* Carey
Hippeastrum aulicum Herb.
Hippeastrum stylosum Herb.

Loganiaceae

- Spigelia anthelmia* L.[▲]

Loranthaceae

- Psittacanthus dichrous* (Mart.) Mart.*[▲]

Lythraceae

- Cuphea flava* Spreng.[▲]

Malpighiaceae

- Byrsonima cydoniifolia* A. Juss.[▲]
Byrsonima gardneriana A. Juss.[▲]
Byrsonima riparia W. R. Anderson
Byrsonima sericea DC.*[▲]
Byrsonima verbascifolia (L.) DC.*[▲]
Galphimia brasiliensis (L.) A. Juss.
Stigmaphyllon paralias A. Juss.*[▲]
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Malvaceae

- Gossypium arboreum* L.
Gossypium hirsutum L.
Pavonia cancellata (L.) Cav.▲
Pseudomalachra ciliaris (L.) H.C. Monteiro▲
Pseudomalachra plumosa (Cav.) H. Monteiro▲
Sida linifolia Cav.▲
Malva rhombifolia (L.) Krause▲
Urena lobata L.▲

Maranthaceae

- Stromanthe tonckat* (Aubl.) Eichler

Marcgraviaceae

- Norantea brasiliensis* Choisy*▲

Melastomaceae

- Clidemia biserrata* DC.*
Clidemia hirta (L.) D. Don*▲
Miconia albicans (Sw.) Triana.*▲
Miconia cf. *amoena* Triana*▲
Miconia ciliata (Rich.) DC.*▲
Pterolepis herincqniana Cogn.
Pterolepis polygonoides (DC.) Triana

Mimosaceae

- Abarema cochliacarpus* (Gomes) Barneby & J.W. Grimes*
Abarema filamentosa (Benth.) Pittier*▲
Acacia farnesiana (L.) Willd.
Chloroleucon foliolosum (Benth.) G.P. Lewis▲
Inga bahiensis Benth.▲
Inga capitata Desv.*▲
Inga edulis Mart.
Inga fagifolia G. Don▲
Inga flagelliformis (Vell.) Mart.
Inga marginata Willd.
Mimosa bimucronata (DC.) Kuntze*
Mimosa pigra L.▲
Mimosa pudica L.▲
Mimosa somnians Humb. & Bonpl. Ex Willd.▲
Pithecellobium dulce (Roxb.) Benth.
Pithecellobium saman (Jacq.) Benth.▲

Molluginaceae

- Mollugo verticillata* L.▲

Moraceae

- Ficus guianensis* Desv. ex Ham.▲

Myrsinaceae

- Rapanea guianensis* Aubl.▲

Myrtaceae

- Calypttranthes brasiliensis* Spreng.*
Calypttranthes dardanoi Mattos
Campomanesia dichotoma (O. Berg) Mattos▲
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<i>Eugenia excelsa</i> O. Berg*
<i>Eugenia ferreiraeana</i> O. Berg
<i>Eugenia hirta</i> O. Berg* [▲]
<i>Eugenia puniceifolia</i> (Kunth) DC.* [▲]
<i>Eugenia uniflora</i> L.* [▲]
<i>Marlierea parviflora</i> O. Berg
<i>Marlierea regeliana</i> O. Berg
<i>Marlierea</i> aff. <i>schottii</i> (O. Berg) D. Legrand*
<i>Marlierea strigipes</i> O. Berg
<i>Myrcia bergiana</i> O. Berg*
<i>Myrcia guianensis</i> (Aubl.) DC.* [▲]
<i>Myrcia hirtiflora</i> DC.
<i>Myrcia</i> aff. <i>laroutteana</i> Cambess.
<i>Myrcia multipla</i> D. Legrand
<i>Myrcia rotundifolia</i> (O. Berg) Kiaersk. [▲]
<i>Myrcia sylvatica</i> (G. Mey.) DC. [▲]
<i>Myrcia tomentosa</i> (Aubl.) DC.
<i>Myrciaria floribunda</i> (H. West ex Willd.) O. Berg* [▲]
<i>Psidium araca</i> Raddi [▲]
<i>Psidium cattleyanum</i> Sabine*
<i>Psidium guineense</i> Sw.* [▲]
Nyctaginaceae
<i>Boerhavia coccinea</i> Mill. [▲]
<i>Guapira nitida</i> (Schmidt) Lundell
<i>Guapira pernambucensis</i> (Casar.) Lundell* [▲]
<i>Pisonia cordifolia</i> Mart. [▲]
<i>Pisonia subcordata</i> Sw.
Ochnaceae
<i>Ouratea crassa</i> Tiegh [▲]
<i>Ouratea cuspidata</i> Tiegh.* [▲]
<i>Ouratea fieldingiana</i> (Gardner) Engl. [▲]
<i>Sauvagesia tenella</i> Lam.
Olacaceae
<i>Ximenia americana</i> L.* [▲]
Oleaceae
<i>Jasminum azoricum</i> L.
Onagraceae
<i>Ludwigia linifolia</i> Poir. [▲]
<i>Ludwigia suffruticosa</i> Walter* [▲]
Orchidaceae
<i>Catasetum discolor</i> (Lindl.) Lindl.* [▲]
<i>Catasetum macrocarpum</i> Rich. ex Kunth*
<i>Cyrtopodium intermedium</i> Brade*
<i>Cyrtopodium paranaense</i> Schltr. [▲]
<i>Dimerandra emarginata</i> (G. Mey.) Hoehne
<i>Encyclia acuta</i> Schltr.
<i>Epidendrum cinnabarinum</i> Salzm. ex Lindl. [▲]
<i>Epidendrum schomburgkii</i> Lindl.

LISTS OF SPECIES

Table 2. Continuation.

<i>Habenaria petalodes</i> Lindl.
<i>Oeceoclades maculata</i> (Lindl.) Lindl.* [▲]
<i>Polystachya concreta</i> (Jacq.) Garay & H.R. Sweet* [▲]
<i>Prescottia stachyodes</i> (Sw.) Lindl. *
<i>Prosthechea fragrans</i> (Sw.) W.E. Higgins
<i>Vanilla chamissonis</i> Klotzch.* [▲]
Passifloraceae
<i>Passiflora cincinnata</i> Mart. [▲]
<i>Passiflora foetida</i> L. [▲]
<i>Passiflora galbana</i> Mast.* [▲]
<i>Passiflora mucronata</i> Lam.* [▲]
<i>Passiflora quadrangularis</i> L.
Phytolacaceae
<i>Microtea paniculata</i> Moq.* [▲]
Poaceae
<i>Andropogon bicornis</i> L. [▲]
<i>Andropogon selloanus</i> (Hack.) Hack.* [▲]
<i>Aristida longifolia</i> Trin.
<i>Cenchrus echinatus</i> L. [▲]
<i>Chloris dandyana</i> C.D. Adams
<i>Cynodon dactylon</i> (L.) Pers. [▲]
<i>Cynodon dactylon</i> var. <i>maritimus</i> (Kunth) Hack.
<i>Dactyloctenium aegyptium</i> (L.) Willd. [▲]
<i>Digitaria ciliaris</i> (Retz.) Koeler [▲]
<i>Digitaria sanguinalis</i> (L.) Scop. [▲]
<i>Echinochloa colonum</i> (L.) Link. [▲]
<i>Echinochloa crus-pavonis</i> (Kunth) Schult.
<i>Eleusine indica</i> (L.) Gaertn. [▲]
<i>Eragrostis ciliaris</i> (L.) R. Br. [▲]
<i>Eragrostis prolifera</i> (Sw.) Steud.
<i>Eragrostis rufescens</i> Schrad. ex Schult. [▲]
<i>Eustachys caribaea</i> (Spreng.) Herter
<i>Gymnopogon foliosus</i> (Willd.) Ness* [▲]
<i>Hymenachne amplexicaulis</i> (Rudge) Nees [▲]
<i>Hyparrhenia diplandra</i> (Hack.) Stapf
<i>Leptochloa scabra</i> Nees
<i>Panicum aquaticum</i> Poir. [▲]
<i>Panicum asperifolium</i> (Desv.) Hitchc. [▲]
<i>Panicum laxum</i> Sw.* [▲]
<i>Panicum pilosum</i> Sw. [▲]
<i>Panicum repens</i> L.
<i>Pappophorum mucronulatum</i> Ness
<i>Paspalidium geminatum</i> (Forssk.) Stapf [▲]
<i>Paspalum arundinaceum</i> Poir.
<i>Paspalum conjugatum</i> P.J. Bergius
<i>Paspalum maritimum</i> Trin.* [▲]
<i>Paspalum vaginatum</i> Sw.* [▲]
<i>Raddia bififormis</i> Hitchc. & Chase

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Table 2. Continuation.

<i>Setaria tenax</i> (Rich.) Desv. [▲]
<i>Setaria vulpiseta</i> (Lam.) Roem. & Schult. [▲]
<i>Sporobolus tenacissimus</i> (L. f.) P. Beauv.
<i>Sporobolus virginicus</i> (L.) Kunth* [▲]
<i>Trichachne insularis</i> (L.) Nees
<i>Urochloa decumbens</i> (Stapf) R.D. Webster
Polygalaceae
<i>Polygala cyparissias</i> A.St.-Hil. & Moq.* [▲]
<i>Polygala violacea</i> Aubl. [▲]
<i>Securidaca volubilis</i> L.
Polygonaceae
<i>Coccoloba confusa</i> How*
<i>Coccoloba laevis</i> Casar.* [▲]
<i>Coccoloba scandens</i> Casar.
<i>Polygonum acre</i> Lam.
Portulacaceae
<i>Portulaca oleracea</i> L. [▲]
Rhamnaceae
<i>Ziziphus joazeiro</i> Mart. [▲]
Rubiaceae
<i>Alibertia sessilis</i> (Vell.) K. Schum.
<i>Anisomeris gracilipes</i> K. Schum.
<i>Borreria scabiosoides</i> Cham. & Schltdl.*
<i>Borreria verticillata</i> (L.) G. Mey. [▲]
<i>Borreria virgata</i> Cham. & Schltdl.
<i>Chiococca alba</i> (L.) Hitchc.* [▲]
<i>Diodia apiculata</i> (Willd. ex Roem. & Schult.) K. Schum.* [▲]
<i>Diodia setigera</i> DC.
<i>Genipa americana</i> L.* [▲]
<i>Guettarda platypoda</i> DC. [▲]
<i>Mitracarpus frigidus</i> (Willd. ex Roem. & Schult.) K. Schum.* [▲]
<i>Palicourea crocea</i> (Sw.) Roem. & Schult.
<i>Psychotria bahiensis</i> DC. [▲]
<i>Richardia grandiflora</i> (Cham. et Schltdl.) Steud. [▲]
<i>Salzmannia nitida</i> DC.* [▲]
<i>Staelia galioides</i> DC.
<i>Staelia virgata</i> (Link ex Roem. & Schult.) K. Schum.
<i>Tocoyena brasiliensis</i> Mart. [▲]
<i>Tocoyena formosa</i> (Cham. & Schltdl.) K. Schum. [▲]
<i>Tocoyena sellowiana</i> (Cham. & Schltdl.) K. Schum. [▲]
Rutaceae
<i>Esenbeckia grandiflora</i> Mart.* [▲]
<i>Pilocarpus pauciflorus</i> A. St.-Hil.
Sapindaceae
<i>Cupania aff. racemosa</i> (Vell.) Radlk.*
<i>Dodonaea viscosa</i> Jacq.
<i>Paullinia pinnata</i> L.
<i>Paullinia trigonia</i> Vell. [▲]
<i>Serjania salzmanniana</i> Schltr.* [▲]

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Table 2. Continuation.

Sapotaceae

Manilkara salzmannii (A. DC.) H.J.Lam[▲]

Manilkara zapota (L.) P. Royen[▲]

Pouteria grandiflora (A. DC.) Baehni*[▲]

Scrophulariaceae

Capraria biflora L.

Scoparia dulcis L.[▲]

Stemodia foliosa Benth.[▲]

Stemodia pratensis (Aubl.) C.P. Cowan

Simaroubaceae

Simaba cuneata A.St.-Hil & Tul.*[▲]

Solanaceae

Cestrum parqui L'Hér.

Cyphomandra fragrans (Hook.) Sendtn.

Lycopersicon esculentum Mill.

Schwenckia americana L.*[▲]

Solanum americanum Mill.[▲]

Solanum paludosum Moric.[▲]

Solanum paniculatum L.[▲]

Solanum stipulaceum Roem. & Schult.[▲]

Sterculiaceae

Guazuma ulmifolia Lam[▲]

Waltheria indica L.[▲]

Waltheria viscosissima A. St.-Hil.[▲]

Theophrastaceae

Jacquinia armillaris Jacq.[▲]

Tiliaceae

Luehea paniculata Mart.

Trigoniaceae

Trigonia nivea Cambess*[▲]

Turneraceae

Turnera ulmifolia L.[▲]

Ulmaceae

Trema micrantha (L.) Blume*[▲]

Verbenaceae

Lantana camara L.[▲]

Lantana rugulosa Kunth

Lippia alba (Mill.) N.E. Br

Stachytarpheta cayennensis (Rich) Vahl

Stachytarpheta elatior Schrad. ex Schult.[▲]

Vitex rufescens A. Juss.[▲]

Violaceae

Hybanthus ipecacuanha (L.) Baill.[▲]

Rinorea aff. *bahiensis* (Moric.) Kuntze

Vitacea

Cissus erosa Rich.*[▲]

Vochysiaceae

Qualea cryptantha (Spreng.) Warm.*

Xyridaceae

Xyris jupicai Rich.*[▲]

LISTS OF SPECIES

The families with the greatest numbers of species had predominately herbaceous habits, followed by shrub-arboreal families (Myrtaceae and Fabaceae) that are common in the Atlantic Forests and of generally wide distribution (Peixoto and Gentry 1990; Silva and Britz 2005).

Pereira and Araujo (2000) compiled a species list for the *restingas* of Espírito Santo and Rio de Janeiro and encountered 1,378 species, 13 % of which were endemic to Rio de Janeiro. A comparison of this study with that presented here reveals that the *restingas* of Pernambuco contain ca. 34 % of the species listed for Espírito Santo and Rio de Janeiro, and only 10 % (140 species) were held in common. Of the 477 species recorded from Pernambuco, 289 (60.71 %) were found in other *restingas* of northeastern Brazil.

Among the shrub and arboreal species with ample distribution within the *restingas* of Pernambuco were: *Andira nitida*, *Buchenavia capitata*, *Byrsonima gardneriana*, *Byrsonima sericea*, *Coccoloba laevis*, *Curatella americana*, *Guettarda platypoda*, *Hancornia speciosa*, *Himatanthus phagedaenicus*, *Inga capitata*, *Manilkara salzmannii*, *Maytenus distichophylla*,

Pera glabrata, *Protium heptaphyllum*, *Sacoglottis matogrossensis*, *Tapirira guianensis*, and *Vismia guianensis*, among others. According to Zickel et al. (2004), these species are also found in other *restinga* areas in northeastern Brazil.

The species with restricted distributions in Pernambuco and not cited for *restingas* of other northeastern states represent 39.29 % (188 species) of all the species encountered, and include: *Abarema filamentosa* (Figure 2), *Annona crassiflora* (Figure 3), *Byrsonima riparia* (Figure 4), *Calyptanthes dardanoi*, *Coccoloba confusa*, *Cyphomandra fragrans*, *Guapira* cf. *nitida*, *Inga flagelliformis*, *Cipura paludosa*, *Myrcia bergiana*, *Myrcia guianensis*, *Paullinia pinnata*, *Pilocarpus pauciflorus*, *Protium bahianum*, *Rollinia pickelli*, *Ruellia geminiflora*, *Staelia galioides*, *Schultesia guianensis*, *Sloanea guianensis*, *Stachytarpheta cayennensis*, *Stylosanthes angustifolia*, and *Urochloa decumbens*.

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Figure 2. Flower and fruit of *Abarema filamentosa* (Benth.) Pittier; municipality of Ipojuca, Pernambuco.

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Figure 3. Lateral view, flower of *Annona crassiflora* Mart.; municipality of Ipojuca, Pernambuco.



Figure 4. Frontal view, inflorescence of *Byrsonima riparia* W. R. Anderson; municipality of Ipojuca, Pernambuco.

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