

The most reported invasive woody plant species

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Since 1996 the number of publications reporting the invasiveness of a woody plant has increased from 3,579 to 10,244. As found two decades ago there is a great disparity in reported cases of invasive woody plants. The majority of publications concern a few regions (Table 1) and there has been no major shift in reporting since the 1990s.

Table 1. Number of publications that refer to the invasiveness of woody plants in:

Africa - tropical	485
Africa - South	981
America - North	2140
America - Central	9
America - South	175
Asia	447
Australia	1430
Europe	843
New Zealand	563
Islands	
Atlantic islands	108
Indian islands	525
Caribbean islands	139
Pacific islands	1310

Species that are reported as invasive more than ten times in the literature are listed in Table 2. The 201 species represent 1.9% of the known woody invasive plants. The majority of species are just reported one or a few times, and scores of species are not represented in the bibliographical database as they are only mentioned in floras.

Bibliographical database

It has the following features:

- It contains over 55,000 references with around one million individually entered keywords (these include location, key species, habitat, life form, etc...)
- over 31,000 entries pertain to woody plants
- 10,244 records specifically deal with invasive woody plants (in 1996 there were 3579 records as reported in some detail by Binggeli et al. 1998)

How are the records obtained?

Chiefly by scanning journals and individual articles, and in more recent years via internet searches. ISI - Web of Knowledge is generally not used with the exception of some citation searches.

What documents are included?

It includes standard refereed papers but also focuses on grey literature (newsletters, thesis, books, newspapers, and unpublished reports). It does not include web sites.

How complete is the database?

The great majority of papers published in main-stream journals are included. Though, it is unclear how much of the grey literature has been traced. Still, over 1100 electronic publications pertaining to invasive woody plants have yet to be entered in to the database.

How biased is the data?

It reflects the compiler's geographical interests (Europe, Africa, Caribbean and Pacific) and pet species (*Acer pseudoplatanus*, *Hippophae rhamnoides*, *Maesopsis eminii*, *Pittosporum undulatum*, *Rubus spectabilis*). There is no doubt that some regions, but Asia and Central America in particular, are under-represented.

Associated with the bibliography there is a substantial electronic library and a set of 2400 hard copies of papers and reports. Further details see Binggeli P., J.B. Hall & J.R. Healey (1998) A review of invasive woody plants in the tropics. School of Agricultural and Forest Sciences Publication Number 13, University of Wales, Bangor.

Table 1. Invasive woody species reported more than ten times in the literature are ranked (R = rank, LF = life form, # = number of publication reporting a species as invasive. Life forms: sS = sub-shrub, S = shrub, Ts = small tree, T = tree).

R	Species		LF	#
1	<i>Lantana</i>	<i>camara</i>	S	757
2	<i>Chromolaena</i>	<i>odorata</i>	S	433
3	<i>Ailanthus</i>	<i>altissima</i>	T	298
4	<i>Ulex</i>	<i>europaeus</i>	S	351
5	<i>Melaleuca</i>	<i>quinquenervia</i>	T	286
6	<i>Mimosa</i>	<i>pigra</i>	Ts	275
7	<i>Cytisus</i>	<i>scoparius</i>	S	260
8	<i>Robinia</i>	<i>pseudoacacia</i>	T	250
9	<i>Schinus</i>	<i>terebinthifolius</i>	Ts	225
10	<i>Psidium</i>	<i>cattleianum</i>	Ts	220
11	<i>Syzygium</i>	<i>jambos</i>	T	205
12	<i>Psidium</i>	<i>guajava</i>	Ts	203
13	<i>Acer</i>	<i>pseudoplatanus</i>	T	197
14	<i>Clidemia</i>	<i>hirta</i>	S	194
15	<i>Lonicera</i>	<i>japonica</i>	V	178
16	<i>Chrysanthemoides</i>	<i>monilifera</i>	S	170
16	<i>Miconia</i>	<i>calvescens</i>	Ts	170
16	<i>Prosopis</i>	<i>juliflora</i>	T	170
19	<i>Leucaena</i>	<i>leucocephala</i>	Ts	166
20	<i>Morella</i>	<i>faya</i>	Ts	139
21	<i>Buddleja</i>	<i>davidii</i>	Ts	133
22	<i>Prunus</i>	<i>serotina</i>	T	128
23	<i>Casuarina</i>	<i>equisetifolia</i>	T	120
24	<i>Triadica</i>	<i>sebifera</i>	T	115
25	<i>Rosa</i>	<i>multiflora</i>	S	106
26	<i>Acacia</i>	<i>saligna</i>	T	102
27	<i>Acacia</i>	<i>longifolia</i>	T	101
28	<i>Pittosporum</i>	<i>undulatum</i>	T	100
29	<i>Acer</i>	<i>negundo</i>	T	98
29	<i>Tamarix</i>	<i>ramosissima</i>	Ts	98
31	<i>Acacia</i>	<i>nilotica</i>	T	94
32	<i>Cryptostegia</i>	<i>grandiflora</i>	v	90
33	<i>Acacia</i>	<i>mearnsii</i>	T	89
34	<i>Lonicera</i>	<i>maackii</i>	V?	88
35	<i>Pinus</i>	<i>radiata</i>	T	87
36	<i>Rubus</i>	<i>fruticosus</i>	S	86
37	<i>Hakea</i>	<i>sericea</i>	Ts	82
38	<i>Rhamnus</i>	<i>cathartica</i>	Ts	82
39	<i>Hedera</i>	<i>helix</i>	V	80
40	<i>Maesopsis</i>	<i>eminii</i>	T	77
41	<i>Acer</i>	<i>platanoides</i>	T	76
42	<i>Solanum</i>	<i>mauritianum</i>	Ts	75
43	<i>Pueraria</i>	<i>lobata</i>	V	73
44	<i>Acacia</i>	<i>dealbata</i>	T	72
45	<i>Acacia</i>	<i>cyclops</i>	Ts	67
46	<i>Elaeagnus</i>	<i>angustifolia</i>	Ts	64
47	<i>Passiflora</i>	<i>mollissima</i>	V	63
48	<i>Rosa</i>	<i>rubiginosa</i>	S	60
49	<i>Rubus</i>	<i>spectabilis</i>	S	59
50	<i>Ligustrum</i>	<i>sinensis</i>	S	58
50	<i>Rubus</i>	<i>alceaefolius</i>	S	58
52	<i>Clematis</i>	<i>vitalba</i>	V	57
53	<i>Pinus</i>	<i>pinaster</i>	T	56
53	<i>Spathodea</i>	<i>campanulata</i>	T	56
55	<i>Berberis</i>	<i>thunbergii</i>	S	55
56	<i>Pseudotsuga</i>	<i>menziesii</i>	T	54
56	<i>Sesbania</i>	<i>punicea</i>	Ts	54
58	<i>Ricinus</i>	<i>communis</i>	sS	53
59	<i>Melia</i>	<i>azederach</i>	T	52
60	<i>Pinus</i>	<i>contorta</i>	T	49
61	<i>Acacia</i>	<i>farnesiana</i>	S	47
61	<i>Celastus</i>	<i>orbiculatus</i>	S	47
61	<i>Parkinsonia</i>	<i>aculeata</i>	Ts	47
61	<i>Rosa</i>	<i>rugosa</i>	S	47
65	<i>Mimosa</i>	<i>pudica</i>	S	46
65	<i>Solanum</i>	<i>elaeagnifolium</i>	sS	46
67	<i>Acacia</i>	<i>melanoxydon</i>	T	45
68	<i>Baccharis</i>	<i>halimifolia</i>	S	44
69	<i>Tamarix</i>	<i>chinensis</i>	Ts	43
70	<i>Pinus</i>	<i>sylvestris</i>	T	41
71	<i>Ligustrum</i>	<i>lucidum</i>	Ts	40
71	<i>Rubus</i>	<i>ulmifolius</i>	S	40
73	<i>Crataegus</i>	<i>monogyna</i>	Ts	37
73	<i>Ligustrum</i>	<i>robustum</i>	Ts	37
75	<i>Fallopia</i>	<i>sachalinensis</i>	sS	36
75	<i>Elaeagnus</i>	<i>umbellata</i>	S	36
75	<i>Hippophae</i>	<i>rhamnoides</i>	S	36

78	<i>Azidirachta</i>	<i>indica</i>	T	34
78	<i>Paulownia</i>	<i>tomentosa</i>	T	34
80	<i>Lupinus</i>	<i>arboreus</i>	S	33
80	<i>Quercus</i>	<i>rubra</i>	T	33
80	<i>Salix</i>	<i>fragilis</i>	T	33
83	<i>Ageratina</i>	<i>riparia</i>	sS	32
83	<i>Olea</i>	<i>europaea</i>	Ts	32
83	<i>Rubus</i>	<i>rosifolius</i>	S	32
86	<i>Piper</i>	<i>aduncum</i>	S	31
87	<i>Calluna</i>	<i>vulgaris</i>	S	30
87	<i>Cinchona</i>	<i>pubescens</i>	Ts	30
87	<i>Pinus</i>	<i>nigra</i>	T	30
87	<i>Ziziphus</i>	<i>mauritiana</i>	T	30
91	<i>Cinnamomum</i>	<i>camphora</i>	T	29
91	<i>Cinnamomum</i>	<i>verum</i>	T	29
91	<i>Sida</i>	<i>acuta</i>	sS	29
94	<i>Cecropia</i>	<i>peltata</i>	T	28
94	<i>Rubus</i>	<i>ellipticus</i>	S	28
96	<i>Eucalyptus</i>	<i>globulus</i>	T	25
96	<i>Genista</i>	<i>monspessulana</i>	S	25
96	<i>Gleditsia</i>	<i>triacanthos</i>	T	25
96	<i>Rubus</i>	<i>argutus</i>	S	25
96	<i>Rubus</i>	<i>niveus</i>	S	25
101	<i>Bischofia</i>	<i>javanica</i>	T	24
101	<i>Leptospermum</i>	<i>laevigatum</i>	Ts	24
101	<i>Lonicera</i>	<i>tatarica</i>	V?	24
101	<i>Salix</i>	<i>babylonica</i>	T	24
101	<i>Sida</i>	<i>rhombifolia</i>	S	24
106	<i>Amorpha</i>	<i>fruticosa</i>	S	23
106	<i>Caesalpinia</i>	<i>decapetala</i>	V	23
106	<i>Calotropis</i>	<i>procera</i>	S	23
106	<i>Picea</i>	<i>sitchensis</i>	T	23
106	<i>Rubus</i>	<i>discolor</i>	S	23
111	<i>Broussonetia</i>	<i>papyrifera</i>	T	22
111	<i>Fraxinus</i>	<i>pennsylvanica</i>	T	22
111	<i>Morus</i>	<i>alba</i>	T	22
111	<i>Senecio</i>	<i>madagascariensis</i>	sS	22
115	<i>Carica</i>	<i>papaya</i>	Ts	21
115	<i>Fallopia</i>	<i>x bohemica</i>	sS	21
115	<i>Larix</i>	<i>decidua</i>	T	21
115	<i>Pinus</i>	<i>patula</i>	T	21
119	<i>Aristotelia</i>	<i>chilensis</i>	S	20

119	<i>Macfadyena</i>	<i>unguis-cati</i>	V	20
119	<i>Passiflora</i>	<i>edulis</i>	V	20
122	<i>Anredera</i>	<i>cordifolia</i>	V	19
122	<i>Pinus</i>	<i>halepensis</i>	T	19
122	<i>Prosopis</i>	<i>glandulosa</i>	Ts	19
122	<i>Prunus</i>	<i>laurocerasus</i>	Ts	19
126	<i>Alstonia</i>	<i>macrophylla</i>	T	18
126	<i>Cordia</i>	<i>macrostachya</i>	S	18
126	<i>Fagus</i>	<i>sylvatica</i>	T	18
126	<i>Jatropha</i>	<i>gossypifolia</i>	S	18
126	<i>Prosopis</i>	<i>chilensis</i>	T	18
126	<i>Ulmus</i>	<i>pumila</i>	T	18
132	<i>Ardisia</i>	<i>elliptica</i>	Ts	17
132	<i>Castanea</i>	<i>sativa</i>	T	17
132	<i>Cedrela</i>	<i>odorata</i>	T	17
132	<i>Cyathea</i>	<i>cooperi</i>	Ts	17
132	<i>Leycesteria</i>	<i>formosa</i>	S	17
132	<i>Mahonia</i>	<i>aquifolium</i>	S	17
132	<i>Prosopis</i>	<i>pallida</i>	T	17
132	<i>Quercus</i>	<i>cerris</i>	T	17
132	<i>Senna</i>	<i>obtusifolia</i>	sS	17
132	<i>Solanum</i>	<i>dulcamara</i>	v	17
142	<i>Acacia</i>	<i>auriculiformis</i>	T	16
142	<i>Adenantha</i>	<i>pavonina</i>	Ts	16
142	<i>Ficus</i>	<i>microcarpa</i>	T	16
142	<i>Lonicera</i>	<i>morrowii</i>	v	16
142	<i>Phoenix</i>	<i>dactylifera</i>	T	16
147	<i>Albizia</i>	<i>lebbeck</i>	T	15
147	<i>Ficus</i>	<i>carica</i>	Ts	15
147	<i>Hiptage</i>	<i>benghalensis</i>	V	15
147	<i>Mangifera</i>	<i>indica</i>	T	15
147	<i>Melastoma</i>	<i>malabathricum</i>	S	15
147	<i>Paraserianthe</i>	<i>faslcataria</i>	T	15
147	<i>Pinus</i>	<i>strobus</i>	T	15
147	<i>Rhizophora</i>	<i>mangle</i>	T	15
147	<i>Rubus</i>	<i>moluccanus</i>	S	15
147	<i>Thunbergia</i>	<i>grandiflora</i>	V	15
157	<i>Acacia</i>	<i>decurrens</i>	Ts	14
157	<i>Aleurites</i>	<i>moluccana</i>	Ts	14
157	<i>Clethra</i>	<i>arborea</i>	Ts	14
157	<i>Falcataria</i>	<i>moluccana</i>	T	14
157	<i>Hakea</i>	<i>gibbosa</i>	S	14

157	<i>Ilex</i>	<i>aquifolium</i>	Ts	14
157	<i>Paraserianthe</i>	<i>losphantha</i>	T	14
157	<i>Pinus</i>	<i>ponderosa</i>	T	14
157	<i>Senecio</i>	<i>inaequidens</i>	sS	14
157	<i>Symphoricarpos</i>	<i>albus</i>	S	14
167	<i>Annona</i>	<i>glabra</i>	Ts	13
167	<i>Frangula</i>	<i>alnus</i>	T?	13
167	<i>Picea</i>	<i>abies</i>	T	13
167	<i>Rubus</i>	<i>constrictus</i>	S	13
167	<i>Schinus</i>	<i>molle</i>	T	13
167	<i>Solanum</i>	<i>torvum</i>	S	13
167	<i>Tamarindus</i>	<i>indica</i>	T	13
167	<i>Tamarix</i>	<i>aphylla</i>	Ts	13
175	<i>Berberis</i>	<i>vulgaris</i>	S	12
175	<i>Litsea</i>	<i>glutinosa</i>	T	12
175	<i>Lycium</i>	<i>ferocissinum</i>	S	12
175	<i>Mikania</i>	<i>scandens</i>	V	12
175	<i>Mimosa</i>	<i>diplotricha</i>	sS	12
175	<i>Pinus</i>	<i>elliottii</i>	T	12
175	<i>Prosopis</i>	<i>velutina</i>	Ts	12
175	<i>Rubus</i>	<i>armeniacus</i>	S	12

175	<i>Sambucus</i>	<i>nigra</i>	Ts	12
184	<i>Araujia</i>	<i>sericifera</i>	V	11
184	<i>Coffea</i>	<i>arabica</i>	Ts	11
184	<i>Cordia</i>	<i>alliodora</i>	T	11
184	<i>Lavatera</i>	<i>arborea</i>	sS	11
184	<i>Passiflora</i>	<i>suberosa</i>	V	11
184	<i>Persea</i>	<i>americana</i>	Ts	11
184	<i>Schefflera</i>	<i>actinophylla</i>	Ts	11
184	<i>Syzygium</i>	<i>cumini</i>	Ts	11
184	<i>Tabebuia</i>	<i>pallida</i>	T	11
184	<i>Trema</i>	<i>orientalis</i>	T	11
184	<i>Vinca</i>	<i>minor</i>	sS	11
195	<i>Albizia</i>	<i>julibrissin</i>	T	10
195	<i>Berberis</i>	<i>darwinii</i>	Ts	10
195	<i>Erica</i>	<i>lusitanica</i>	S	10
195	<i>Fraxinus</i>	<i>uhdei</i>	T	10
195	<i>Pinus</i>	<i>taeda</i>	T	10
195	<i>Populus</i>	<i>alba</i>	T	10
195	<i>Rhus</i>	<i>typhina</i>	Ts	10