

The Red List of Rhododendrons - review of the findings



Sara Oldfield

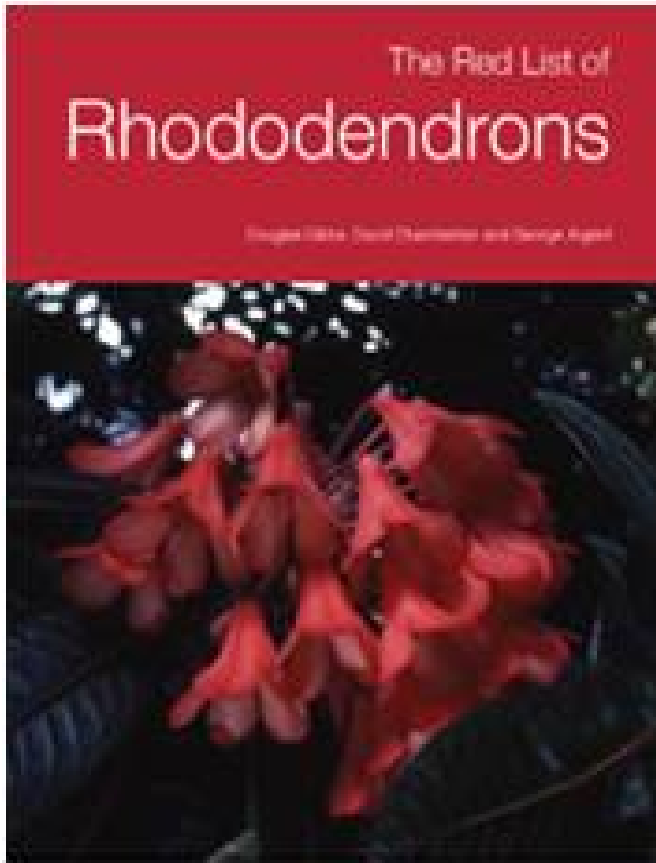
**Botanic Gardens Conservation International (BGCI)
IUCN/SSC Global Tree Specialist Group**



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Plants for the Planet

The Red List of Rhododendrons



Published in 2011

**IUCN assessments of over
1000 species based on:**

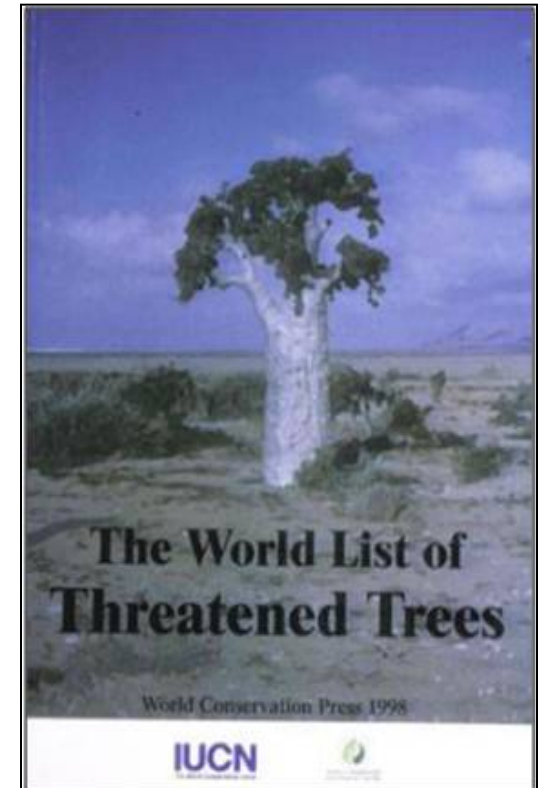
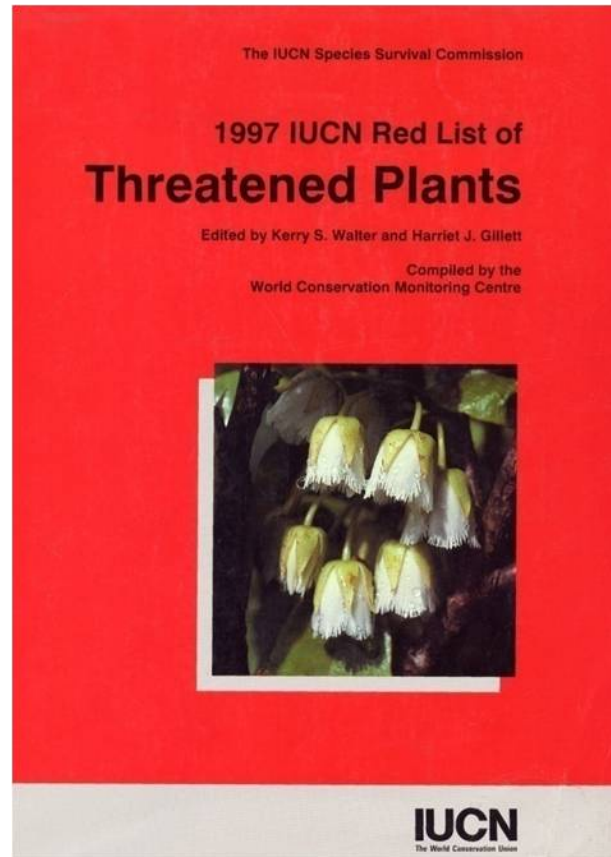
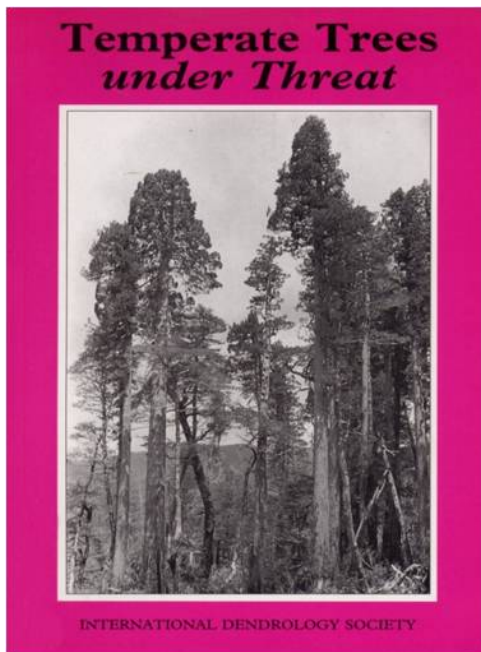
- literature review
- expert knowledge
- workshops
- GIS mapping



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Builds on previous information



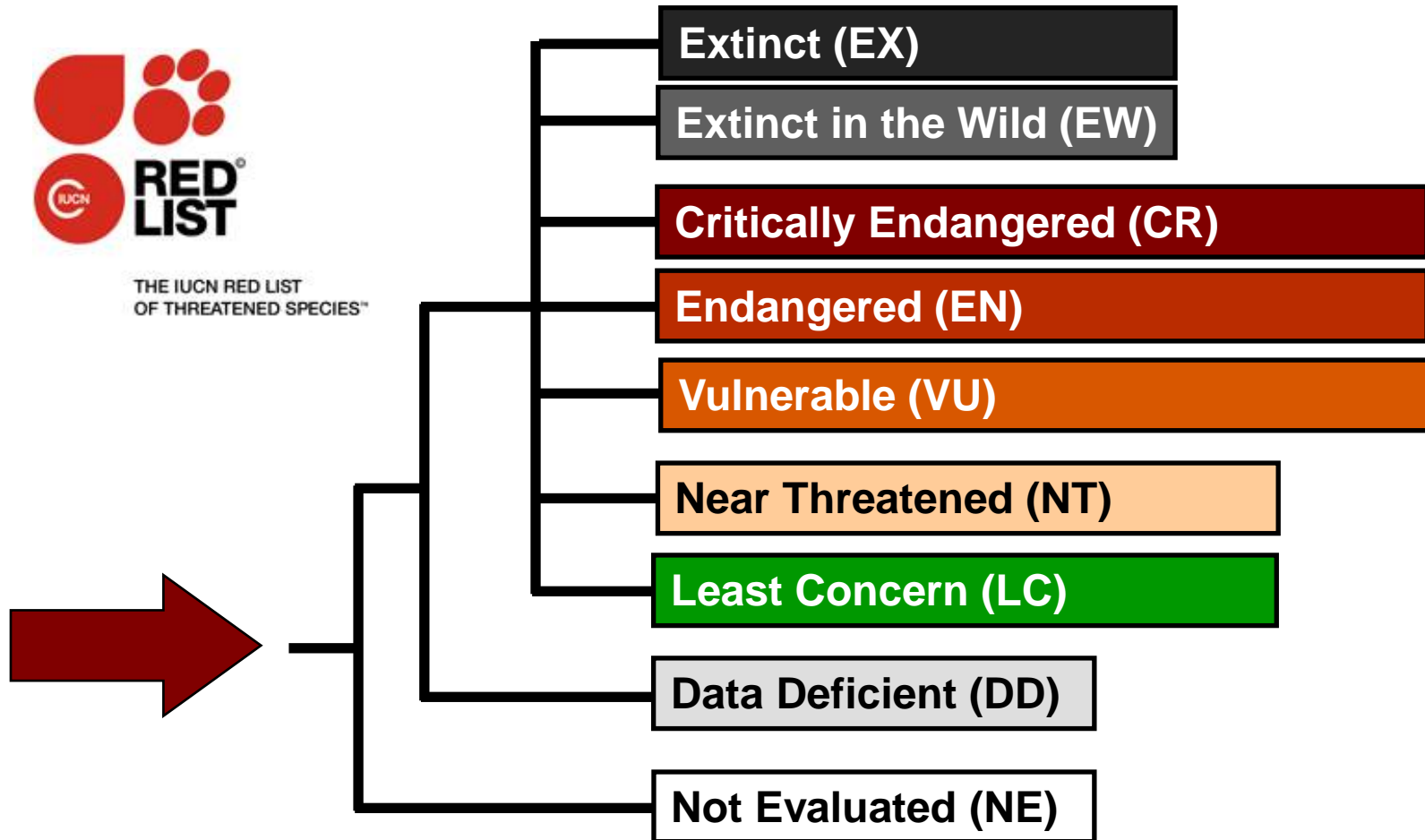
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Uses the IUCN categories of threat



THE IUCN RED LIST
OF THREATENED SPECIES™



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Nature of the IUCN Criteria

CRITERIA

A

Population reduction

B

Restricted geographic range

C

Small population size & decline

D

Very small or restricted population

E

Quantitative analysis

Quantitative thresholds

THREATENED CATEGORIES

Critically Endangered (CR)

Endangered (EN)

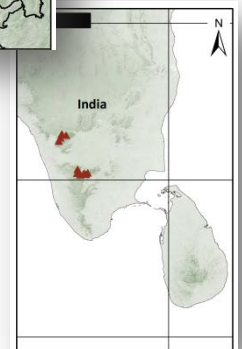
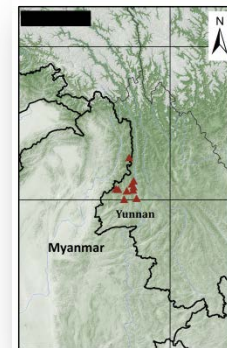
Vulnerable (VU)



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Red List of Rhododendrons



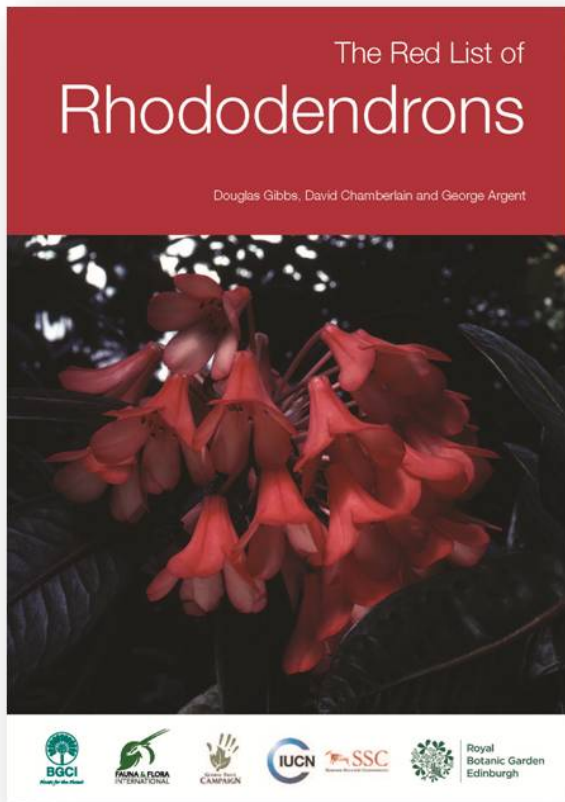
Workshop in Singapore in 2008 followed by mapping of species distributions



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Red List of Rhododendrons



RDL Category	No. of Taxa
Extinct (EX)	1
Extinct in the Wild (EW)	1
Critically Endangered (CR)	36
Endangered (EN)	39
Vulnerable (VU)	241
Near Threatened (NT)	66
Data Deficient (DD)	290
Least Concern (LC)	483
Total	1157



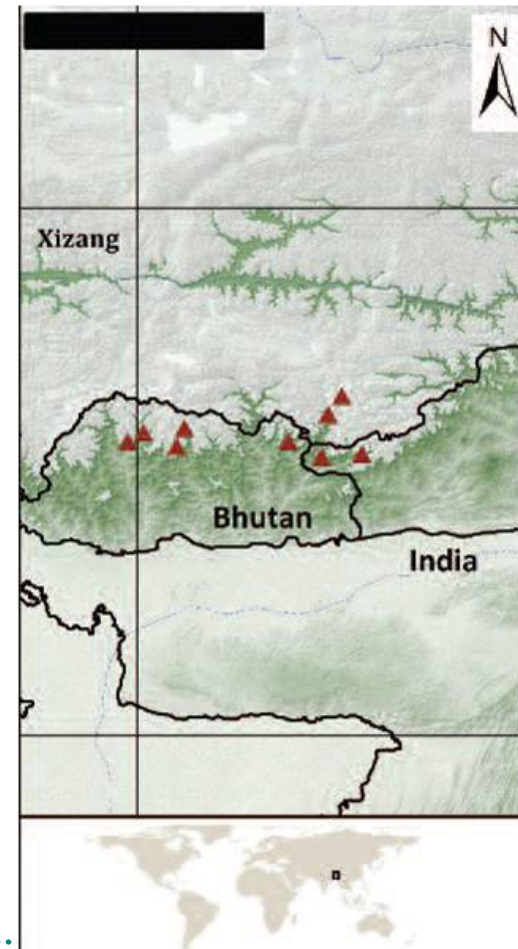
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Rhododendron acrophilum - CR



R. dalhousie var. *rhadbotum* - VU



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Rhododendron pubigernum - LC



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2013 IUCN Red List



THE IUCN RED LIST
OF THREATENED SPECIES™

Plant taxa - 16,722

Threatened plant taxa - 11,933

Woody plants - 9,246

Threatened woody plants - 7,549

Rhododendron - 11



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Global Tree Red Listing

Priorities:

- Regional
- Taxonomic
- Economically valuable
- species
- Eight Red List reports

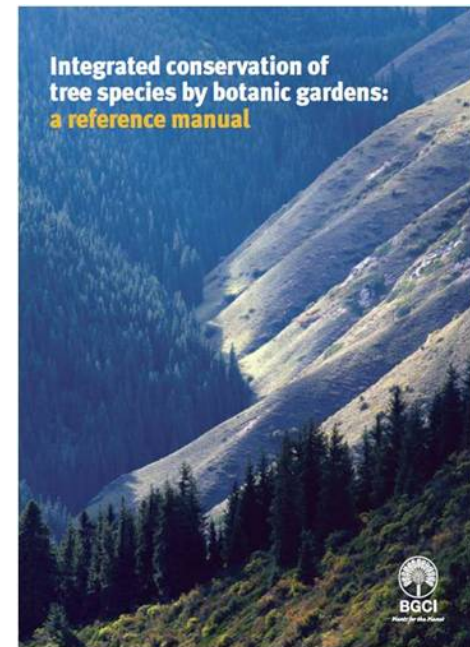


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How can we use the assessments?

- Conservation planning and priority setting
- Hotspots of species diversity
- Monitoring impacts of climate change – using GIS maps as a baseline and for modelling
- *In situ* conservation and restoration action
- *Ex situ* – BGCI *PlantSearch* Database
- Education and awareness raising



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Global Trees Campaign

- **Established in 1998**
 - **Partnership between FFI & BGCI**
 - **ONLY** international programme focused on threatened trees
 - unique niche and need
 - based on sound science
 - takes account of human needs
 - helps address climate change
-



Increasingly important to take action

10% of woody plants threatened with extinction.

Under a changing climate, trees can:



- **migrate** to appropriate environmental conditions;
 - **adapt** to the new environmental conditions, or
 - become **extinct**.
-
- Montane species - many Rhododendrons - at risk



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Forest habitats at risk



Resilient, well connected ecosystems suffer fewer ill effects from climate change than fragmented, overexploited ecosystems – *Rhododendron* spp important in montane ecosystems. Forest protection so important but doesn't always reflect important tree species



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- ***Rhododendron protistum* var. *giganteum***
- known locally as “big tree”, reaching up to 20-25m
- only known in the wild from Gaoligongshan mountain in SW Yunnan

Conserving the Big Tree Rhododendron



- Gaoligongshan nature reserve staff have been collecting data on the big tree rhododendron since 2004 as part of their monthly patrols
- Dr Zhang Changqin from Kunming Institute of Botany & FFI conservation staff provided support on monitoring, management, propagation and public awareness



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Ex situ conservation – insurance policy, research and monitoring & material for restoration

Global Survey of
Ex situ Rhododendron Collections



Botanic Gardens Conservation International

February 2012



Ex situ survey carried out in 2012

Over 300 institutions provided data

48 of the most threatened taxa (EW, CR & EN are in *ex situ* collections; 17 are not currently known to be



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ERICACEAE

V ✓

**Rhododendron
concinnum**
(Subsection Triflora)

1956.8288 K

C. & W. China

Results of *Rhododendron ex situ* conservation survey

	In Cultivation	Not in Cultivation	Total
EX	0	1	1
EW	1	0	1
CR	19	17	36
EN	28	11	39
VU	180	61	241
NT	50	16	66
DD	81	209	290
LC	411	72	483
Total	770	387	1157



Results of *Rhododendron ex situ* conservation survey

Number of records by RDL category and source of material

	Unknown or horticultural source	Known wild source	
	No. of collections	No. of collections	No. of species
EW	4	0	1
CR	101	12	11
EN	138	21	18
VU	1515	116	89
NT	433	48	33
DD	421	31	23
LC	5969	513	304





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Botanic Gardens Conservation International

The world's greatest force for plant conservation



BGCI > Plant search

Plant search

[English](#) | [Spanish](#) | [Japanese](#) | [Using plant search](#) | [Mapping applet](#)

[Add Your Plants](#)

Locate rare and threatened plant species in cultivation around the world using our unique PlantSearch database.

This database is compiled from lists of living collections submitted to BGCI by the world's botanic gardens. The database presently includes over 1 million records.

Information on threat status of each taxa is provided by a direct link to IUCN's 1997 and latest Red Lists. Further nomenclatural and bibliographic information is provided through the link to the TROPICOS database maintained by the Missouri Botanic Garden. Additional references are available in the **Listing of Plants of the World** section provided by our link to the Australian New Crops website.

The database is also linked to lists of medicinal plants, crop wild relatives and CITES listed plants.

Enter terms in as many - or as few - fields as you like.

Search for plants:

Genus:

Species:

Epithet:

Crop Wild Relative:

- Medicinal plants
- New Zealand threatened plants
- Mexican threatened plants
- CITES list
- TCD list
- GTC list

Search by conservation status:

IUCN Red List:

IUCN Red List 1997:

[Which IUCN list should I choose?](#)

PLEASE NOTE: To protect rare and valuable plants, the garden locations of plant species cannot be revealed. You can contact gardens via BGCI using the 'Request More Info' link in the results.

[Find out more](#)

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Search Plants


We found **7688** matches

#	Plant Name	No. found in BGs worldwide	IUCN Red List	IUCN Red List 1997	IPNI	Images on Google	Tropicos	CWR	Plants of the World	Alpine Species	CITES Appendix	Contact Gardens
1	Rhododendron 'Lulu'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
2	Rhododendron 'Hyperion'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
3	Rhododendron 'GoldMohur'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
4	Rhododendron 'ClementineLemaire'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
5	Rhododendron 'HansaBay'	0	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
6	Rhododendron 'BeautyofLittleworth'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
7	Rhododendron 'Thor'	2	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
8	Rhododendron 'Rosebird'	1	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
9	Rhododendron 'LesJury'	0	-		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request

Education centre

Climate change information centre

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GardenSearch 

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Genus:

Species:

Epithet:

IUCN Red List:

IUCN Red List 1997:

Crop Wild Relative:

- Medicinal plants
- New Zealand threatened plants
- Mexican threatened plants
- CITES list
- TCD list
- GTC list

[Which IUCN list should I choose?](#)

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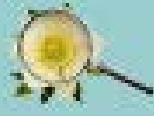
We found **13** matches


#	Plant Name	No. found in BGs worldwide	IUCN Red List	IUCN Red List 1997	IPNI	Images on Google	Tropicos	CWR	Plants of the World	Alpine Species	CITES Appendix	Contact Gardens
1	Rhododendron album	2	Vulnerable		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
2	Rhododendron cyanocarpum	23	Vulnerable	Vulnerable	Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
3	Rhododendron dalhousiae var. rhabdotum	5	Vulnerable	Indeterminate	Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
4	Rhododendron fictolacteum	15	Lower Risk: Conservation Dependent	Vulnerable	Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
5	Rhododendron jucundum	2	Vulnerable	Vulnerable	Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
6	Rhododendron kanehirai	1	Extinct in the Wild		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
7	Rhododendron loerzingii	0	Vulnerable		Look Up	Search	Look Up	-	Look Up	Look Up		Send Request
8	Rhododendron		Critically		Look				Look			Send

Links to BGCI's GardenSearch database -

PlantSearch – plants in cultivation in BGs and seedbanks: >1 million records

GardenSearch – BG directory, >3,000 records

Plant Search 

Garden Search 



The screenshot shows the BGCI website homepage. At the top left is the BGCI logo with the tagline "Plants for the Planet". The main header reads "Welcome to Botanic Gardens Conservation International" and "The world's greatest force for plant conservation". A search bar is located in the top right corner. On the left side, there is a vertical navigation menu with links: "BGCI: The global network", "Our work", "Our supporters and partners", "Join us", "Resource centre", "Education centre", "Climate change information centre", "Plant Search", "GardenSearch", and "Sign up to our newsletter". The main content area features a large image of a white flower cluster with the headline "Assessing the conservation value of ex situ collections" and a sub-headline about a collaborative project with the Botanical Garden of Ghent University. Below this is a world map with numerous blue location pins. Another headline reads "BGCI launches advanced search facility for GardenSearch" with a sub-headline about online access to data on more than 3,000 botanical institutions. On the right side, there is a "Botanic gardens around the world" section with a world map, a "Plants for the Planet" section with a "Visit the site" link, and a "Message from our Patron, HRH The Prince of Wales" section with a photo of a man in a field and a quote: "Securing the World's imperiled flora will help address poverty, improve".

An International Sentinel Plant Network

- Living plant collection information is dynamically connected and capable of serving as an early warning system to predict, detect and prevent the incursion of new invasive pests (insects, plant pathogens, invasive plants).



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GardenSearch: Advanced Search

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Use this Advanced Search to identify expertise, facilities, and resources at botanical institutions around the world. Just select one or more search criteria from the list below, and click on **Search Gardens** to identify all gardens that meet your selected criteria.

Garden details

Country:

Institution type:

Keyword:

BGCI Members only

International Agenda Registrants

Search Gardens

[+ Expand ALL fields](#)

+ Public features and facilities

+ Research or conservation features and facilities

+ Plant Collections

+ Conservation Programmes

+ Conservation/Ecology Research Programmes

+ Plant Biology and Related Research Programmes

+ Education Programmes

Search Gardens

Please note that the data contained in GardenSearch is primarily provided and managed by individual institutions. While BGCI attempts to maintain correct and up-to-date data for its members, and fixes all errors brought to its attention, we cannot guarantee the completeness or accuracy of the data. We welcome and encourage institutions to manage their own profiles by [registering as a Garden Editor](#).

- Research or conservation features and facilities

- Maintain native habitat
- Have an herbarium
- Have micropropagation/tissue culture facilities
- Have a seed bank

Check All

Uncheck All

- Plant Collections

- Have a published plant catalogue
- Have a computerized plant record system
- Have a plant collections policy
- Monitor for invasive pests, pathogens, and/or plants
- Have an invasive species policy
- Have an access and benefit sharing policy

Check All

Uncheck All

- Conservation Programmes

- Have a plant conservation programme
- Have a medicinal plant programme
- Have an ex situ conservation programme
- Have a reintroduction programme
- Interpret threatened species in collections
- Partner with academic institutions
- Partner with government agencies
- Partner with corporations
- Partner with non-profit organizations

Check All

Uncheck All

- Conservation/Ecology Research Programmes

- Conduct conservation biology research
- Conduct conservation genetics research
- Conduct restoration ecology research





Elements of an action plan

- **Fill in gaps in Red List data**
- **Field research**
- **Prioritise further *ex situ* collection – genetic representation, dispersed collections**
- **Work with local authorities and communities to protect areas of high Rhododendron diversity**
- **Promote collaboration**



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THANK YOU

