

Brugmansia insignis

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Plantae	Tracheophyta	Magnoliopsida	Solanales	Solanaceae

Taxon Name: *Brugmansia insignis* (Barb. Rodr.) Lockwood ex R.E. Schult.

Synonym(s):

- ¥ *Brugmansia dolichocarpa* Lagerh.
- ¥ *Brugmansia longifolia* Lagerh.
- ¥ *Datura dolichocarpa* (Lagerh.) Saff.
- ¥ *Datura insignis* Barb. Rodr.
- ¥ *Datura longifolia* (Lagerh.) Saff.

Taxonomic Source(s):

Hay, A., Gottschalk, M. & Holgu'n, A. 2012. *Huanduj - Brugmansia*. Florilegium, Sydney & Royal Botanic Gardens, Kew.

Taxonomic Notes:

Thought by Lockwood (1973) and some subsequent authors to be a recombinant hybrid (of *Brugmansia versicolor* and *B. suaveolens*), but that has since been disproven by breeding experiments [(see Hay *et al.* (2012: 114)].

Frequently misidentified as *B. suaveolens*, especially in ethnobotanical and anthropological literature.

Brugmansia species as a whole have sometimes been viewed as cultigens (e.g. Bristol, 1966). This view was not accepted by Hay *et al.* (2012: 15) who view them as species long conserved through cultivation by indigenous people. There is no evidence for any of the species having come into being under human husbandry from wild progenitors, since no candidates for wild progenitors exist.

Assessment Information

Red List Category & Criteria: Extinct in the Wild [ver 3.1](#)

Year Published: 2014

Date Assessed: October 31, 2013

Justification:

Most of the rationale for this assessment applies to all species of the genus:

- ¥ There are no herbarium collections of any species of this genus made from confirmed wild plants.
- ¥ No botanist specializing in this genus has ever reported seeing wild plants of any species.
- ¥ (Verbal) Reports by non-specialist botanists of the occurrence of "wild" plants are either misidentifications (usually of *Datura*), or misinterpretation of remnants or localized escapes from cultivation, usually along creeks and occurring by vegetative propagation from stem fragments. In all such instances investigated in Ecuador and Colombia, the plants are of the anthropogenic hybrid

Brugmansia x candida (Hay *et al.* 2012: 172-177). It is quite clear that such instances do not represent self-sustaining sexually reproducing populations.

¥ The complete lack of evidence of fruit dispersal or spontaneous seedlings, combined with the presence of large numbers of fruits containing viable seed (though this not in *B. insignis*), suggests their dispersers are extinct.

¥ Hence, all the species should best be regarded as Extinct in the Wild.

¥ They are all threatened with total extinction in their native South America because of the ongoing practice of eradicating them from gardens because of their poisonous nature, combined with the progressive loss of the traditional (indigenous) knowledge of their multiple uses (which is what appears to have been the reason for their long-term survival, perhaps over millennia).

Geographic Range

Range Description:

Defining a native geographic range for this species is speculative.

Lockwood (1973) formed the view that, despite the exclusive association of *Brugmansias* with human habitation, native distributions of the species could be defined and recognized by the presence of intraspecific variability and high levels of fruit set, in contrast to low variability and low or absent fruit set in clones taken outside their native range.

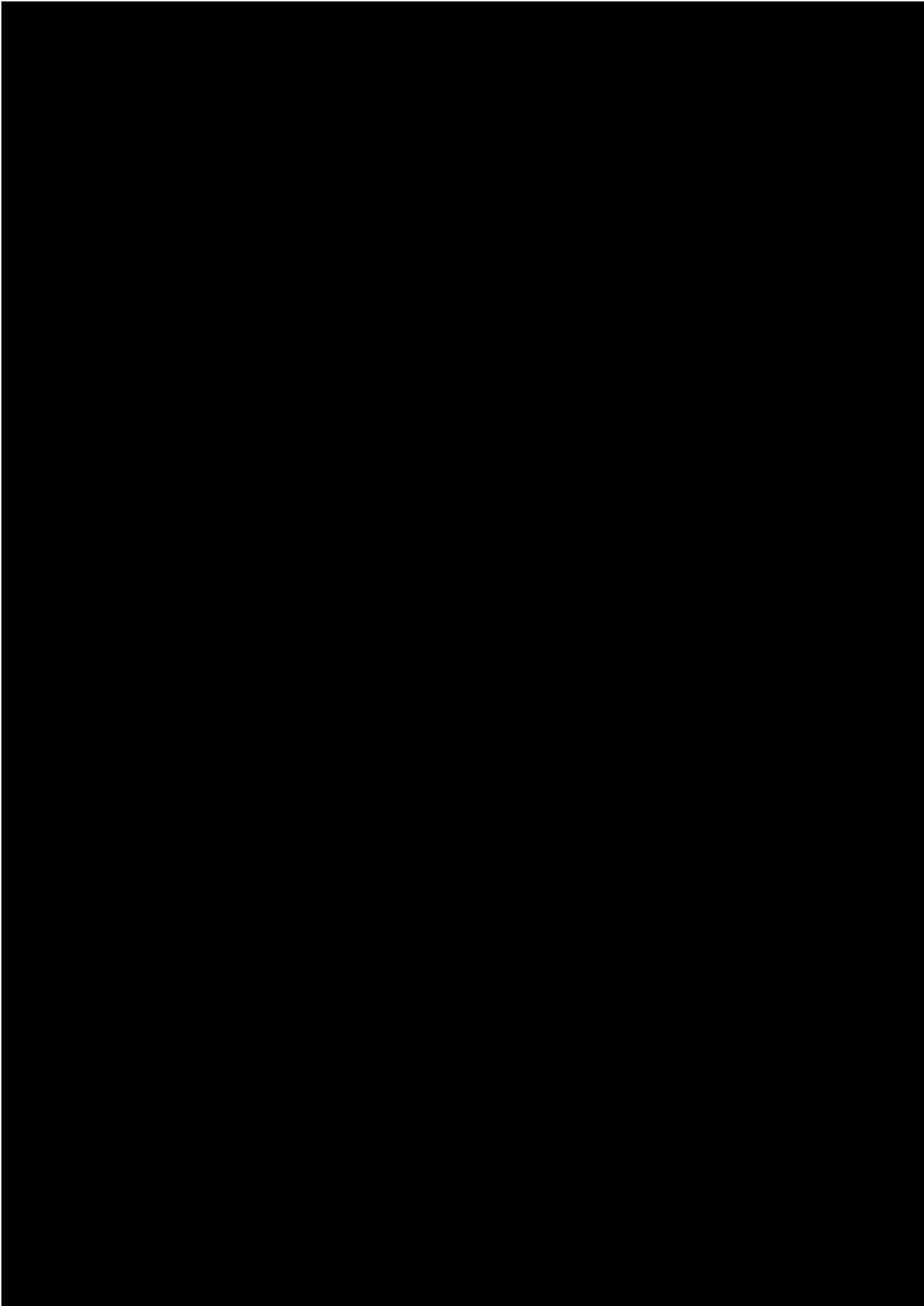
However, *Brugmansia insignis*, while exhibiting high variability, rarely sets fruit for reasons that are unclear (though artificial hybridization demonstrates it is fertile). Hay *et al.* (2012: 94) mapped a putative native distribution based largely on the distribution of indigenous groups who make exclusive use of this *Brugmansia* species and who cultivate a range of several varieties: the eastern Andean foothills of western Amazonia from Colombia to Bolivia. It has also been recorded in the Colombian Dept. of Meta in the Orinoco drainage.

There are scattered occurrences, almost always of single clones, in gardens well to the west of this putative native range, including wet areas of the Pacific lowlands of Colombia. One particular site of note is Santo Domingo de los Colorados, Ecuador, where it is quite commonly cultivated and used by the Tsɬchila.

Country Occurrence:

Regionally extinct: Bolivia, Plurinational States of; Brazil; Colombia; Ecuador; Peru

Distribution Map



Population

Since this genus survives only in cultivation, its wild population is zero. There are anecdotal views expressed by some indigenous healers that plants of this (and other) *Brugmansia* species are being eradicated from some indigenous gardens due to its toxicity and the declining numbers of healers expert enough to use it safely. However, there are no quantitative data regarding this.

Habitat and Ecology (see Appendix for additional information)

This species is cultivated in indigenous gardens, in areas with relatively even rainfall between 2500 and 5000 mm, supporting rain forest. It is occasional as a remnant in abandoned gardens (and there probably transient as the plants are not shade tolerant). There are widely scattered occurrences in cultivation, sometimes in more seasonal areas, and sometimes at up to ca. 2000 m, across to the Pacific slopes of the Andes.

The elevation range within the putative native range of the species is 100-600 m.

Systems: Terrestrial

Use and Trade (see Appendix for additional information)

There is a very wide range of medicinal and spiritual uses among the indigenous people who cultivate it, with various forms (!cultivars) recognized (Hay *et al.* 2012: 22-73). It is occasionally grown as an ornamental plant, but it is seldom seen in cultivation outside its presumed native range, and is virtually absent from cultivation outside of tropical South America.

As with the rest of this genus, its usefulness, far from being a threat, appears to be what has allowed it to avoid complete extinction.

Threats (see Appendix for additional information)

As with all other species of *Brugmansia*, there are no records at all of wild populations of *B. insignis*.

The absence of wild plants was first recorded (albeit in relation to other *Brugmansia* species) by Ruiz & Pavón in the late 18th Century (Schultes and von Thune de Jamarillo-Arango 1998: 114). Later, in spite of decades of field work in NW South America, R.E. Schultes and his students Lockwood and Bristol, who specialized in this genus and other neotropical psychoactive plants, recorded finding no wild brugmansias at all (Bristol 1966, Lockwood 1973). Recent examination by Hay of numerous herbarium collections has turned up no specimens collected from the wild (Hay *et al.* 2012: 172).

While it is valued by those who know well how to use it both medicinally and as an entheogen, it is feared for its toxicity and superstitions about its 'evil' nature by those who do not, and it is anecdotally reported as being eradicated from gardens, sometimes at the behest of local authorities in response to the use of scopolamine for criminal purposes.

Loss of interest in cultivating this species, through loss of traditional healing skills, as well as active steps to eradicate it in places are the principal and current threats, as with other *Brugmansia* species.

Conservation Actions (see Appendix for additional information)

The complete absence of wild plants suggests, as with other *Brugmansia* species, that the disperser(s) is/are extinct. The continued existence of this species within its presumed native range is currently dependent on its being cultivated by indigenous people.

Its ongoing survival appears dependent on maintenance or rehabilitation of cultural traditions in which it is used. Education about its cultural and practical value, as well as its precarious conservation status seem essential to counteract the negativity with which these plants are often seen. Legal protection may be desirable to counteract knee-jerk eradication of the plants by local authorities in response to criminal use (*burundanga*).

In this species, and unlike other *Brugmansia* species, spontaneous fruit formation is extremely rare, though hand-pollination between different clones can be successful. Getting a representative range of clones into cultivation in tropical botanic gardens, and breeding them, would seem a practical step.

Credits

Assessor(s): Hay, A.

Reviewer(s): Scott, J.A.

Bibliography

Bristol, M. 1966. Notes on the species of tree daturas. *Botanical Museum Leaflets, Harvard University* 21: 229-248.

Hay, A., Gottschalk, M. & Holgu'n, A. 2012. *Huanduj - Brugmansia*. Florilegium, Sydney & Royal Botanic Gardens, Kew.

IUCN. 2014. The IUCN Red List of Threatened Species. Version 2014.1. Available at: www.iucnredlist.org. (Accessed: 12 June 2014).

Lockwood, T.E. 1973. A Taxonomic Revision of *Brugmansia* (Solanaceae). Unpublished Ph.D. Thesis, Harvard University.

Ruiz, H. 1777-1788. *Journals*. [Later translated and published as: Schultes, R.E. & von Thenen de Jaramillo-Arango, M.J.N. (1998). *The Journals of Hip-lito Ruiz: Spanish Botanist in Peræ and Chile 1777Ð1788*. Timber Press, Portland.].

Schultes, R.E. & von Thenen de Jaramillo-Arango, M.J.N. [translated from the original Spanish journals of Hip-lito Ruiz]. 1998. *The Journals of Hip-lito Ruiz: Spanish Botanist in Peræ and Chile 1777Ð1788*. Timber Press, Portland.

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External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
14. Artificial/Terrestrial -> 14.4. Artificial/Terrestrial - Rural Gardens	-	Suitable	Yes
14. Artificial/Terrestrial -> 14.5. Artificial/Terrestrial - Urban Areas	-	Suitable	No

Use and Trade

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

End Use	Local	National	International
Medicine - human & veterinary	No	No	No
Establishing ex-situ production *	No	No	No
Other (free text)	No	No	No

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.2. Gathering terrestrial plants -> 5.2.3. Persecution/control	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
12. Other options -> 12.1. Other threat	Ongoing	Whole (>90%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.4. Scale unspecified
5. Law & policy -> 5.2. Policies and regulations

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Lower elevation limit (m): 100
Upper elevation limit (m): 600

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