The IUCN Red List of Threatened Species™
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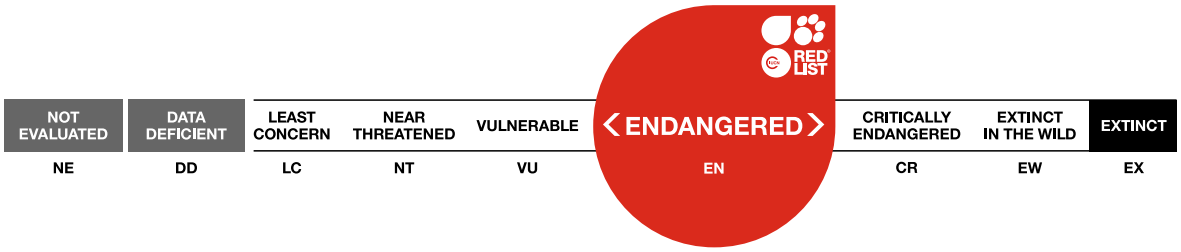
Vanilla planifolia, Vainilla Mansa

Amendment version

Assessment by: Vega, M., Hernández, M., Herrera-Cabrera, B.E. & Wegier, A.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Plantae	Tracheophyta	Liliopsida	Asparagales	Orchidaceae

Scientific Name: *Vanilla planifolia* Jacks. ex Andrews

Common Name(s):

- Spanish; Castilian: Vainilla Mansa, Vainilla, Vainilla Colibrí
- Mayan languages: Zizbic
- Nahuatl languages: Tlixóchitl

Taxonomic Notes:

In its wild form, *Vanilla planifolia* Andrews is the primary wild relative of vanilla, *V. planifolia* and Tahitian vanilla, *V. tahitensis* J.W. Moore (USDA, ARS, GRIN 2017).

Assessment Information

Red List Category & Criteria: Endangered B2ab(iii,v) ver 3.1

Year Published: 2020

Date Assessed: February 16, 2017

Justification:

Vanilla planifolia has a relatively wide range, but a narrow area of occupancy (AOO) of around 80 km^2. Its population is highly fragmented. The habitat quality and extent are being continuously reduced by land use change, especially for agriculture and cattle grazing. Extraction for scientific collections and for research purposes due to its potential to be used for genetic improvement of *V. planifolia* are its main threat. Trade at the local, national, and international level exists, as it is used for food, but also to perfume creams and conditioners, as well as to produce handicrafts, although the latter seems to be restricted to subsistence use. These impacts have led to a continuing decline in the number of mature individuals and a population decline that warrants its listing as Endangered under criterion B2ab(iii,v).

Previously Published Red List Assessments

2017 – Endangered (EN)
https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T103090930A103090933.en

Geographic Range

Range Description:

Vanilla planifolia is native to Mexico, where it can be found in the states of Puebla, Oaxaca, Chiapas, Quintana Roo. It is also native to Belize. It occurs at altitudes of 150 to 900 m asl, rarely to 1300 m asl.

It is unknown if subpopulations in other countries are native or escaped from cultivation. For example,

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in Panama it is known mostly from Barro Colorado Island and San Blas Province, perhaps an indication that it has been introduced there. The species seems to be naturalized from cultivated populations in Florida (cf. Luer, 1972) and in Jamaica (Fawcett and Rendle 1910), two areas well botanized by experienced collectors. Foldats (1969) indicated that the species is common in Venezuela, but did not cite records—neither did Dunsterville and Garay (1959–76) include it in their works on Venezuelan orchids. South American wild specimens previously identified as *V. planifolia* and others from elsewhere outside Central America have proven to be mis-identifications. On the other hand, there are some collections from Ecuador that match closely the Central American cultivated material. It is doubtful that *V. planifolia* is native in regions outside of Mesoamerica. Supposedly, wild specimens of *V. planifolia* from Rio Palenque Centre, Ecuador, have proven to be *V. hartii.*

The original distribution in Mexico is incomplete. There are several old collections from Yucatán from the xerophytic thorn scrub of the northern part of the peninsula but it is suspected that they represent escaped, old relics from cultivated plants, since this habitat is very different from the moister forests where it is wild at present (Soto-Arenas 2009, Soto-Arenas and Dressler 2010).

Country Occurrence:

Native, Extant (resident): Belize; Mexico (Chiapas, Oaxaca, Puebla, Quintana Roo)

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Population

There are very few and scattered occurrences of this species known at present—the largest subpopulation in northern Oaxaca has been completely removed as a source of cuttings to establish new plantations. The population trend is decreasing, and there is a continuing decline in mature individuals. Furthermore, the population is severely fragmented.

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

This species can be found in subtropical/tropical moist lowland forest. It seems to prefer moist forest, seasonally dry in spring, and favours calcareous terrain. It is absent in volcanic areas and in the wet tropical rainforests of Mexico. In moister areas it can be found in secondary, mature forests. It flowers mainly in April to May, towards the end of the dry season.

Systems: Terrestrial

Use and Trade

It is locally used and commercialized at the local, national and international level for food. In Oaxaca it is used to perfume creams and conditioners. Also, it is sometimes used to produce handicrafts. It is the primary wild relative of, and potential gene donor to vanilla and tahitian vanilla (USDA, ARS, GRIN 2017).

Threats **(see Appendix for additional information)**

This species is mainly threatened by habitat reduction and unregulated exploitation for scientific collections and research. Furthermore, wild individuals are extracted to be planted in existing vanilla plantations and for hybridization trials with cultivated individuals.

Conservation Actions **(see Appendix for additional information)**

This species occurs in the Biosphere Reserves El Ocote and Montes Azules. However, the species is not adequately protected and there are no active *in situ* conservation measures in place. It is conserved *ex situ*, with the largest collections outside of Mexico, in Madagascar and La Réunion. In Mexico it is protected by the national legislation NORM-059-SEMARNAT-2010 (SEMARNAT 2010), but enforcement needs to be improved. Like all orchids, it is included in CITES Appendix II.

Credits

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Soto-Arenas, M.A. 2009. Recopilación y análisis de la información existente sobre las especies mexicanas del género Vanilla (reporte intermedio). Herbario AMO, Instituto Chinoín, A.C., Ciudad de México.

Soto-Arenas, M.A. and Dressler, R.L. 2010. A revision of the Mexican and central american species of *Vanilla* Plumier ex Miller with a characterization of their ITS region of the nuclear ribosomal DNA. *Lankesteriana* 9(3): 285–354.

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Disclaimer

External Resources

For Supplementary Material, and 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?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Resident	Suitable	-
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	Resident	Suitable	Yes

Plant Growth Forms
(http://www.iucnredlist.org/technical-documents/classification-schemes)

Plant Growth Form
E. Epiphyte

Use and Trade
(http://www.iucnredlist.org/technical-documents/classification-schemes)

End Use	Local	National	International
Other household goods	Yes	Yes	Yes
Handicrafts, jewellery, etc.	Yes	Yes	Yes
Research	Yes	No	No
Food - human	No	No	No

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

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	-	-	Low impact: 3
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.2. Gathering terrestrial plants -> 5.2.1. Intentional use (species is the target)	Ongoing	-	-	Low impact: 3
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place
(http://www.iucnredlist.org/technical-documents/classification-schemes)

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Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Occurs in at least one protected area: Yes
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: Yes
In-place education
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management / trade controls: Yes

Conservation Actions Needed

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

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.1. International level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km^2): 80
Estimated extent of occurrence (EOO) (km^2): 297928
Lower elevation limit (m): 150
Upper elevation limit (m): 900

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Population
Continuing decline of mature individuals: Yes
Population severely fragmented: Yes
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes

Amendment

Amendment reason: The Threat code for "biological resource use" was corrected for this assessment (from 5.1.1 to 5.2.1).

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The IUCN Red List Partnership

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The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.