

# Target 1: Building a World Flora Online

**Dr Marianne le Roux**, South Africa

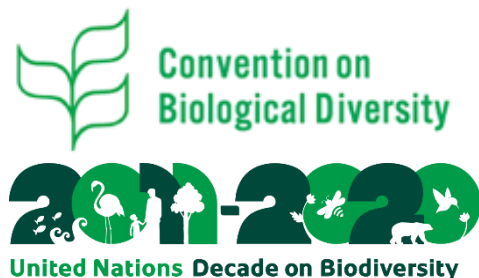
World Flora Online Technical Working Group member

**Dr Pierre-André Loizeau**, Switzerland

Co-chairman, World Flora Online Council

**Dr Peter Wyse Jackson**, United States of America

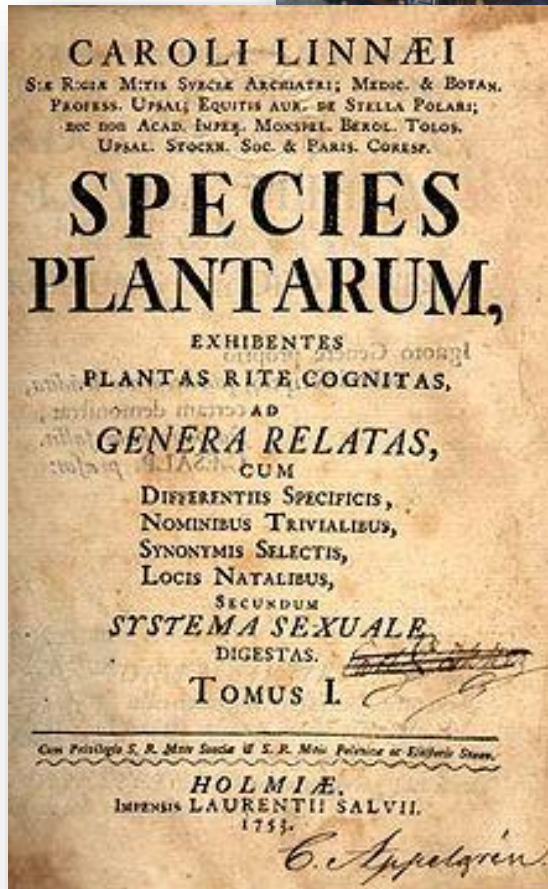
Co-chairman, World Flora Online Council



# Previous efforts to catalogue the World's Plants



## Carl Linnaeus (1707–1778)



- The *Species Plantarum* (1753) included **6 000** species in about 1 000 genera
- Linnaeus expanded his knowledge to cover about 7 700 plant species
- He believed that the world had no more than 10 000 plant species

# Previous efforts to catalogue the World's Plants

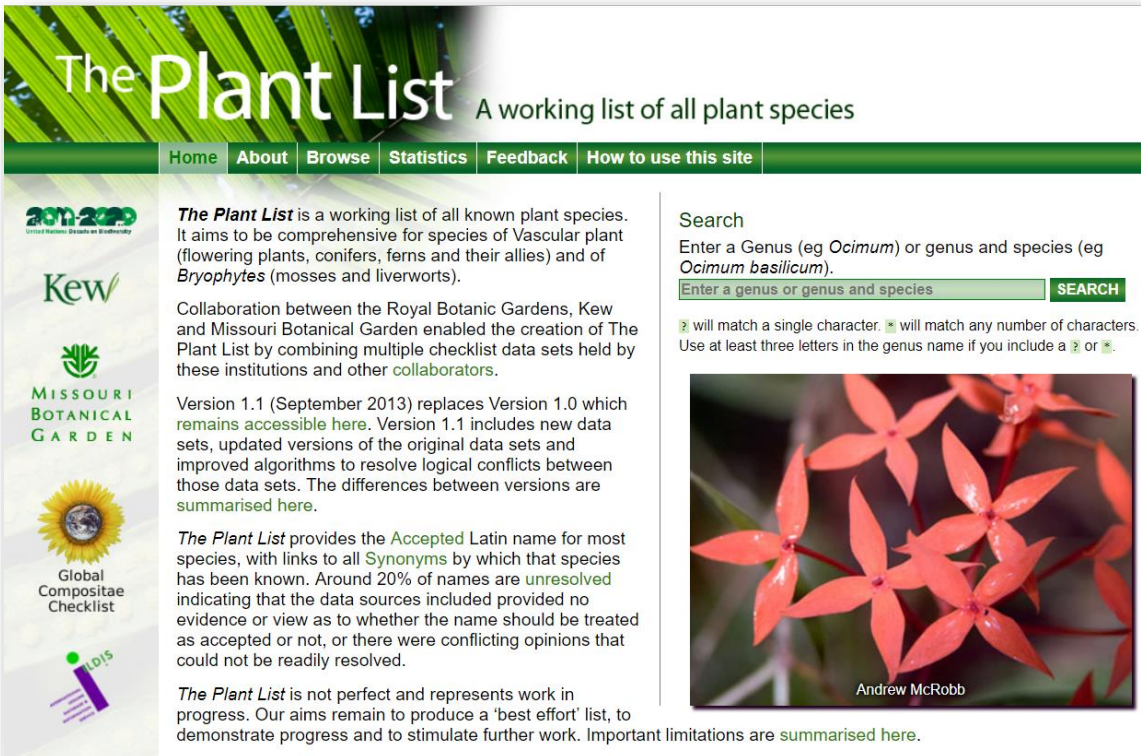


## Augustin-Pyramus de Candolle (1778–1841)

- Compilation of the *Prodromus Systematis Naturalis Regni Vegetabilis* began in 1824 and eventually ran to 17 volumes
- Collectively, the *Prodromus* provide a treatment for **58 975** species of Dicotyledons and Gymnosperms
- The monocots and *Ficus* were never completed



# The Plant List



The Plant List A working list of all plant species

Home About Browse Statistics Feedback How to use this site

**2011-2019**  
World Flora Online

**Kew**

**MISSOURI BOTANICAL GARDEN**

**Global Compositae Checklist**

**LDIS**

**The Plant List** is a working list of all known plant species. It aims to be comprehensive for species of Vascular plant (flowering plants, conifers, ferns and their allies) and of *Bryophytes* (mosses and liverworts).

Collaboration between the Royal Botanic Gardens, Kew and Missouri Botanical Garden enabled the creation of The Plant List by combining multiple checklist data sets held by these institutions and other collaborators.


Version 1.1 (September 2013) replaces Version 1.0 which remains accessible [here](#). Version 1.1 includes new data sets, updated versions of the original data sets and improved algorithms to resolve logical conflicts between those data sets. The differences between versions are summarised [here](#).

*The Plant List* provides the **Accepted** Latin name for most species, with links to all **Synonyms** by which that species has been known. Around 20% of names are **unresolved** indicating that the data sources included provided no evidence or view as to whether the name should be treated as accepted or not, or there were conflicting opinions that could not be readily resolved.

*The Plant List* is not perfect and represents work in progress. Our aims remain to produce a 'best effort' list, to demonstrate progress and to stimulate further work. Important limitations are summarised [here](#).

Search  
Enter a Genus (eg *Ocimum*) or genus and species (eg *Ocimum basilicum*).  
 **SEARCH**

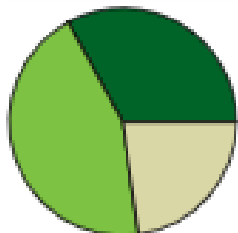
? will match a single character. \* will match any number of characters. Use at least three letters in the genus name if you include a ? or \*.






Andrew McRobb

- Version 1.1
- January 2014

<http://www.theplantlist.org>

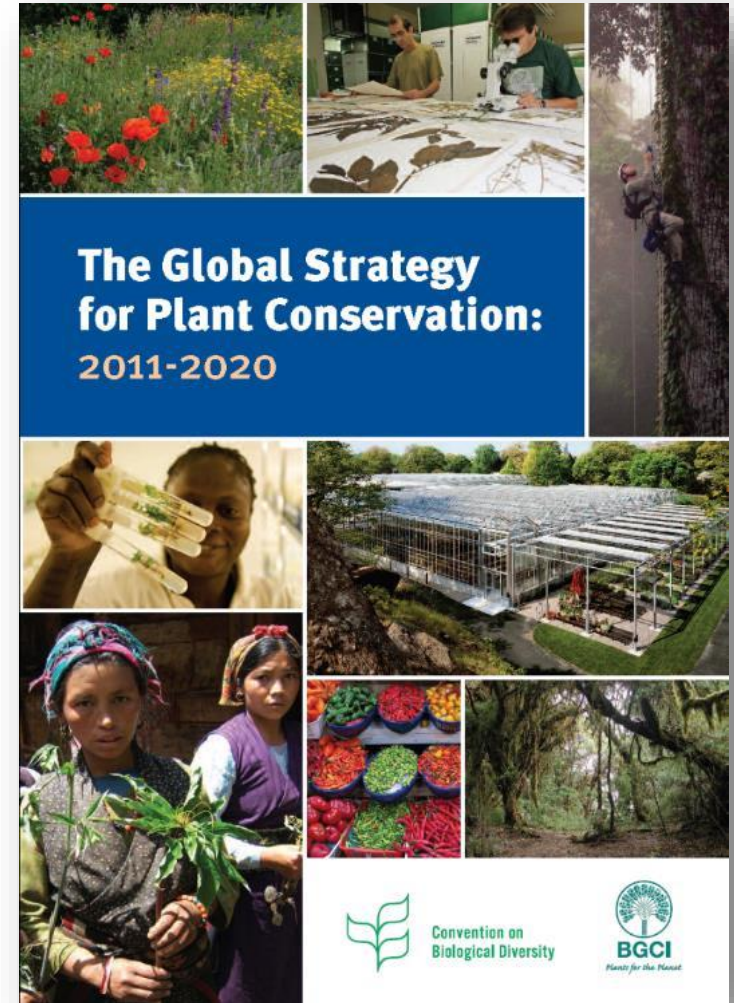


Status	Total
 <b>Accepted</b>	350,699 33.0%
 <b>Synonym</b>	470,624 44.2%
 <b>Unresolved</b>	242,712 22.8%

Category	Number
Species	1 064 035
Families	642
Genera	17 020

# Target 1 - 2020

- An online Flora of all known plants should include:
  - Accepted names
  - Comprehensive synonymy
- Target 1 – 2010 provides the foundation to create a global Flora



# World Flora Online

<http://www.worldfloraonline.org/>



# Endorsement of an international Project

- Global Partnership for Plant Conservation Endorsement, St Louis, 2011
- International Botanical Congress (IBC) Endorsement, Melbourne, 2011



# WFO: An international consortium

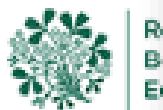
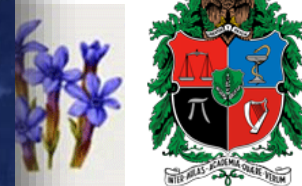
- **Kick Off**  
St Louis, February 2012
- **SBSTTA Side Event**  
Montreal, May 2012
- **Planning Meeting**  
St Louis, July 2012
- **WFO Project Launch**  
India, October 2012





# WFO: An international consortium

- Memorandum of Understanding opened for signature in January 2013
- 42 signatories and growing...



# WFO: An international consortium

- **1st WFO Council**  
Edinburgh  
10-14 November  
2013
- **2nd WFO Council**  
St-Petersburg  
23-27 June 2014
- **3rd WFO Council**  
Geneva  
25-29 January 2015



# WFO: An international consortium

- **4th WFO Council**  
Rio de Janeiro  
19-24 October 2015
- **5th WFO Council**  
New York  
25-30 April 2016
- **6th WFO Council**  
Pretoria  
8-11 November 2016



# WFO: An international consortium

- **7th WFO Council**  
Berlin  
27-31 March, 2017
- **8th WFO Council**  
Paris  
13-17 November, 2017
- **9th WFO Council**  
Bogota  
18-22 June, 2018



# What do we mean by WFO?

## An open-access, web-based compendium

It will include:

- All known vascular plants
- All regions
  - Countries as the basic unit
  - Lower- and higher-level regions accommodated
- Free access over the Internet
- Single, authoritative, user-orientated, accurate, coordinated, baseline on all of the world's plants
- Draw information from published Floras, checklists and taxonomic and other revisions

**Bryophyte  
Families:**



**Pteridophytes  
Families:**



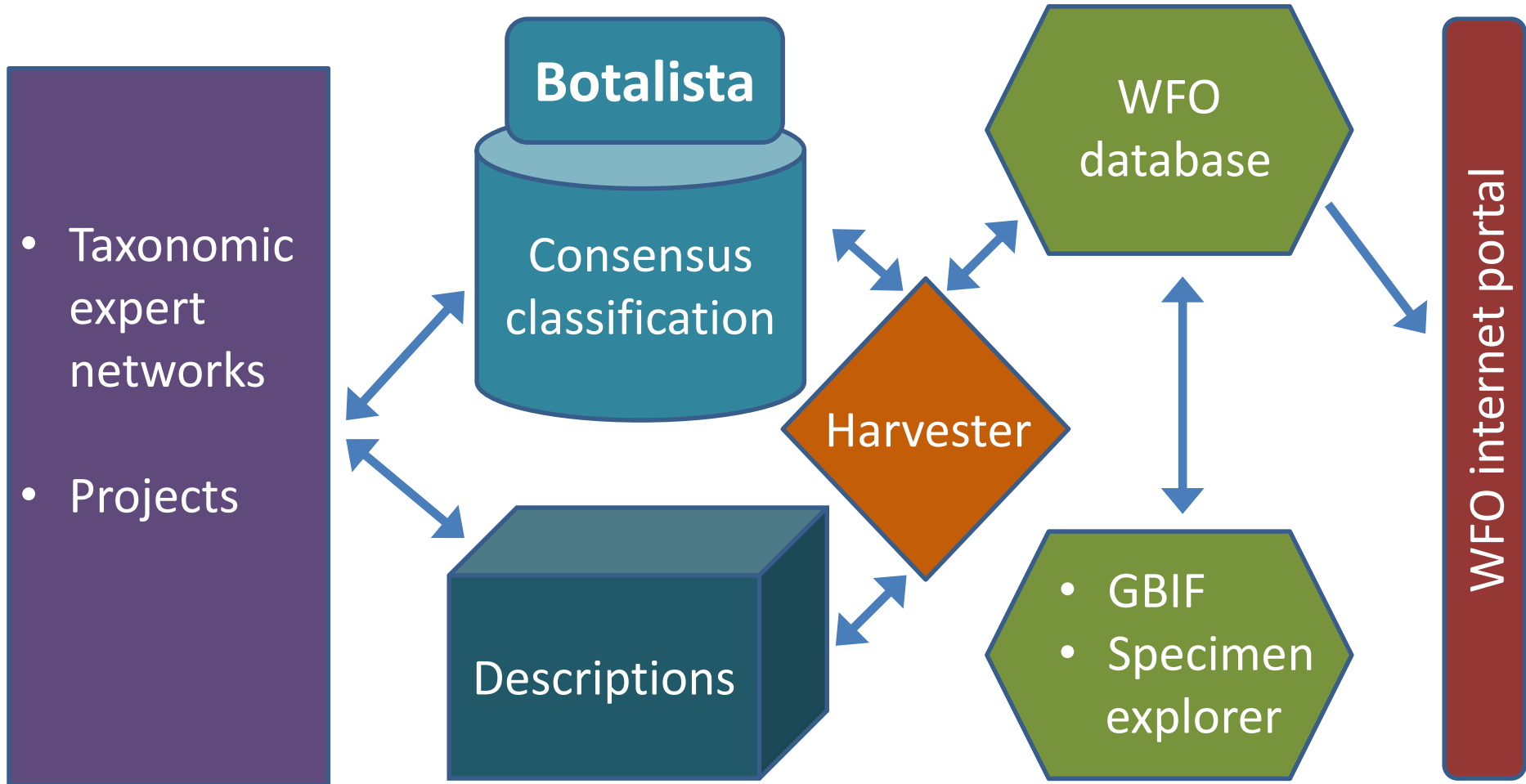
**Gymnosperm  
Families:**



**Angiosperm  
Families:**



# The WFO system



# Some target audiences

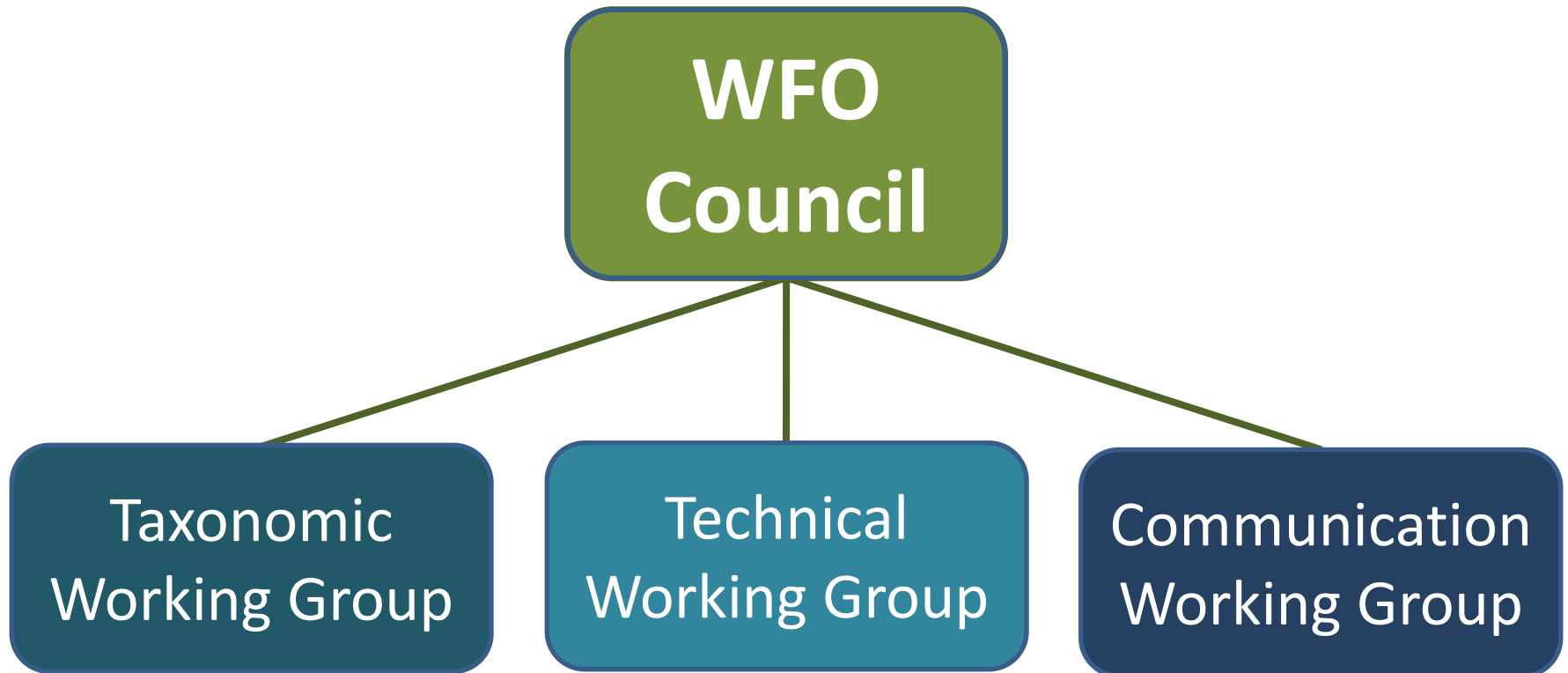
## Consumers

- **Conservationists**  
Especially those who are working on GSPC Targets and other CDB areas
  - Conservation Scientists
  - Conservation Planners/Policy Makers
  - Invasive species researchers
  - Sustainable use researchers
  - Economic Botanists/Ethnobotanists
- **Plant taxonomists**
- **Other scientists**  
Ecologists, Anthropologists, Archaeologists, Pharmacologists
- **General interest groups**  
Natural historians, citizen scientists, etc.

## Contributors

- **Primary data providers**
- **Information converters**
- **Taxonomic curators**
- **Expert taxonomic reviewers**
- **Technical data/system manager**

# WFO organisation





# Public portals

<http://about.worldfloraonline.org/>



An international initiative of the Global Partnership for Plant Conservation

[Home](#)

## Welcome to the website of the World Flora Online Consortium

There are an estimated 400,000 species of vascular plants on Earth, with some 10 percent more yet to be discovered. These plants, both known and unknown may hold answers to many of the world's health, social, environmental and economic problems. A full inventory of plant life is vital if many threatened species are to be protected and if their full potential is to be realized before many of these species, and the possibilities they offer, become



Frequently Asked Questions

Taxonomic Expert Networks (TENs)

MOU Partners List

Documents

Objectives

Follow us



## News

### World Flora Online Council Meeting Paris, France - November 2017

The Fall 2017 World Flora Online Council meeting was held in Paris, France on November 13-17, 2017. Hosted by the National Museum of Natural History.

# Public portals

<http://www.worldfloraonline.org/>



The screenshot shows the homepage of the World Flora Online website. The header is green and contains the logo on the left, navigation links (Home, Browse, About, Contact, Data) in the center, and social media icons (Facebook, Twitter) and a 'Sign in' button on the right. The main content area features a large background image of a green plant with a white flower. The title 'An Online Flora of All Known Plants' is prominently displayed in white, with the subtitle 'Supporting the Global Strategy for Plant Conservation' below it. A search bar with a magnifying glass icon and the text 'Search by species, genus or family name, or any words describing the plant' is positioned in the center. To the right of the search bar is an orange 'Search' button. Below the search bar, there is a circular icon and the text 'Isotria medeoloides (Pursh) Raf. Vulnerable Species'. At the bottom of the page, there are links for 'Data Providers', 'Resources', 'Comments', and 'Terms of Use'.

World Flora Online  
A Project of the World Flora Online Consortium

Home Browse About Contact Data

f t Sign in

## An Online Flora of All Known Plants

Supporting the Global Strategy for Plant Conservation

Explore [1 324 107 names](#), [55 272 images](#), [identification keys](#), [113 095 descriptions](#), [31 676 distributions](#) and [1 151 199 references](#).

Search by species, genus or family name, or any words describing the plant

Search

Isotria medeoloides (Pursh) Raf.  
*Vulnerable Species*

Data Providers  
Resources

Comments  
Terms of Use

# Specimen explorer

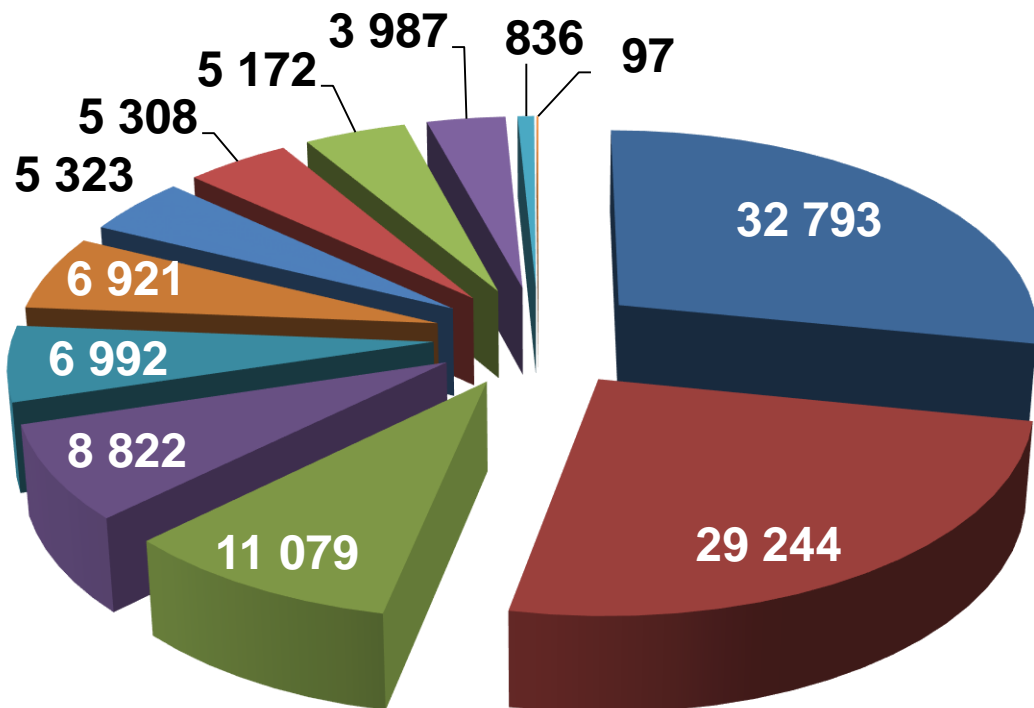
<http://wfospecimens.cybertaxonomy.org/>



The following herbaria provide data for this prototype:

- Botanischer Garten und Botanisches Museum Berlin (Germany)
- Conservatoire et Jardin botaniques de la Ville de Genève (Switzerland)
- Missouri Botanical Garden (St. Louis, USA)
- Muséum National d'Histoire Naturelle (Paris, France)
- New York Botanical Garden (USA)
- Royal Botanic Garden Edinburgh (UK)
- Royal Botanic Gardens Kew (UK)
- South African National Biodiversity Institute (Pretoria, RSA)

# Report: Species descriptions



- Flora do Brasil 2020 project
- Flora of China
- Flora of North America
- e-Flora of South Africa
- Flora Mesoamericana
- Flora de Nicaragua
- Flora de Panama
- Manual de Plantas de Costa Rica
- Plants of the World Online Portal
- New York Botanical Garden
- SolanaceaeSource.org
- Novon

Species on earth: Ca. 400 000

Descriptions uploaded: 192 365 (= 98 362 species)

**25%**

**completed**

# Other data sources

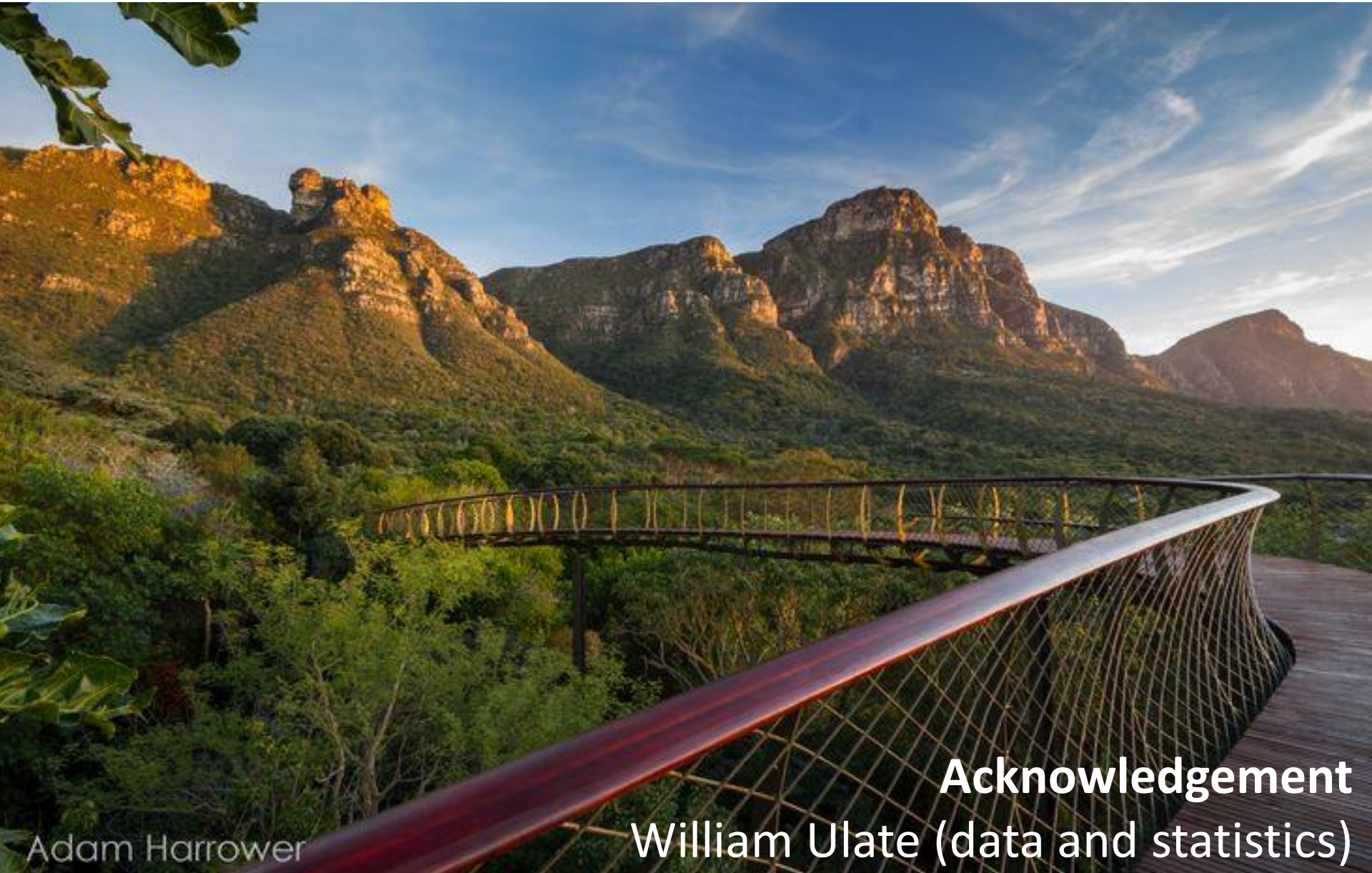
## Data uploaded

- **References:** 121 175 (71 849 taxa)
- **Vernacular names:** 15 933 (11 632 taxa)
- **Images:** 55 272 (6 927 taxa)
- **Threat statuses:** 23 287 taxa

# A collaborative project

- General organisation, advice, support, etc. (all members)
- eMonocot platform (Kew)
- Development of the Public Portal based on eMonocot (Missouri)
- Use of the Google Cloud (New York)
- Work on the user interface and communications tools (Rio de Janeiro and Missouri)
- General graphic design (Missouri)
- Specimen explorer (Berlin)
- Work on the taxonomic backbone, The Plant List (Kew and Edinburgh)
- Taxonomic management of the taxonomic backbone through the nomenclatural module of Botanical (Geneva)
- List of taxonomic specialists (all members)

# Thank you!



Adam Harrower

**Acknowledgement**  
William Ulate (data and statistics)