

# ORCHID CONSERVATION NEWS

The Newsletter of the Orchid Specialist Group of the IUCN Species Survival Commission

Issue 2

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## ORCHID CONSERVATION IN 2022

### Editorial



Grinnell Glacier, Glacier National Park, Montana, USA, 1914. Courtesy GNP Archives, Powerpoint

When this photo was taken, there was a glacier easily seen and photographed, its existence and extent documented for us. By 2022, it has been estimated that this Park is warming about twice the global average. Climate warming does impact glaciers even those not so easily viewed by Park visitors. The impact of annual snowpack melt on orchids and companion plants growing downslope in any glaciated montane region may soon if not already present conservation challenges such as landslides deeply burying plants, changes in precipitation pattern altering snowpack formation, or simply because the substrate cooling from seasonal glacier melt ends and plants become vulnerable to warmer conditions: they die. We cannot ignore the impact of unseasonal warmth on plants adapted to a colder environment. <https://www.nps.gov/glac/learn/nature/climate-change.htm>

In our first issue of 2022, we heard from Larry Zettler about conservation challenges to the Ghost Orchid

(*Dendrophylax lindenii*) in South Florida, USA, and from Jasmine Janes on the possible impacts of climate change on conservation initiatives whether in North America or elsewhere. Since then there have been multiple climate change-linked impacts to the lives of people and to the environment. Weather patterns have shifted temporally and spatially giving rise to unpredicted weather events. Extensive and persistent inundation of Pakistan, destructive floods in Australia, severe droughts leading to loss of wildlife and vegetation in Africa, and megafires scorching parts of Europe, Asia, Australia, North and South America, and a North American megadrought (Godfree, Williams, Cook, and Smerdon, 2022). How can we adapt orchid conservation programs to such massive changes in weather patterns and resultant ecological impacts? What about alpine orchids? As climate warms, what is their fate? How can we best conserve them? The following source is useful. <https://ecoevocommunity.nature.com/posts/the-fate-of-alpine-orchids-in-a-changing-world>

We look forward to novel approaches to address these challenges to wild terrestrial and epiphytic orchids. We would like to hear from you and welcome news items. Marilyn H.S. Light, Editor

### Rare Small Whorled Pogonia (*Pogonia medeoloides*)

A population of the rare species has been located within a protected, upland area in Vermont, U.S.A. The federally threatened species, thought to be extinct in Vermont since 1902, was an exciting discovery.

More information and an image of *I. medeoloides* can be found here. <https://vtfishandwildlife.com/newsroom/federally-threatened-orchid-discovered-in-vermont>

## Update on orchids Down Under: Red Listing and fire impacts

Centre for Australian National Biodiversity Research (Joint Venture Between Parks Australia and CSIRO),  
Canberra, ACT, Australia.

Heidi Zimmer (heidi.zimmer@csiro.au)

Twenty-three Australian endemic orchids will be published on the IUCN Red List when it is updated on 9 December following a project led by the Centre for Australian National Biodiversity Research (CANBR). The species include terrestrial orchids from genera including *Caladenia*, *Diuris*, *Prasophyllum*, *Pterostylis*, *Rhizanthella* and *Thelymitra*, and an epiphytic orchid, *Oberonia attenuata*. This has increased the number of Australian orchids on the Red List from 28 to 51.



*Diuris flavescens*  
Credit: M.A. Clements



*Thelymitra adorata*  
Credit: M.A. Clements

The project identified orchids listed as threatened under the Australian legislation with recent IUCN-compliant assessments. Statutory assessments were obtained from the Australian Government's publicly accessible Species Profiles and Threats database<sup>1</sup> and transposed into the IUCN Species Information System. This provides a model for other Australian endemic species to be assessed for the Red List in the future. The work was supported by the Commonwealth Threatened Species Scientific Committee and the Threatened Species and Ecological Communities Working Group which coordinates threatened species listing assessments across Australian governments using a common assessment method<sup>2</sup> based on the Red List.

CANBR is also collaborating with the Australian Network for Plant Conservation on assessment of the 2019-2020 bushfire impacts on Australian epiphytic orchids. Epiphytic orchids are vulnerable to fire because they are largely unable to resprout post-fire, lack a seedbank, and are reliant on rainforest trees (as hosts) that may be damaged/killed by fire (Godfree et al. 2021). Prioritising species with restricted distributions within the burnt area, we selected four orchids for detailed field survey: *Adelopetalum argyropum* (syn. *Bulbophyllum argyropus*), *Plectorrhiza purpurata* (syn. *Schistotylus purpuratus*), *Sarcochilus aequalis* and *Tropilis angusta*.

1 – Australian Government's publicly accessible Species Profiles and Threats database  
<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

2 – Common Assessment Method  
<https://www.dcceew.gov.au/environment/biodiversity/threatened/cam>

**Are orchids adapting to new habitats? Is their adaptation limited temporally or spatially? What are their limits?**

*Zeuxine strateumatica* - Marilyn Light

In 2019, herbarium and recent records of the introduced *Zeuxine strateumatica* in the continental USA were assessed. Latitudinal spread was northward but limited to coastal or estuarine habitat as in Charleston, South Carolina. Some observations further north appear to be horticultural and associated with pot plants as opposed to native habitat thus not considered as natural spread. Most recently, iNaturalist ([www.naturalist.org](http://www.naturalist.org)) shows westward spread along the Gulf of Mexico as far west as Padre Island near Corpus Christi, Texas, close to the border with Mexico, where a flowering plant was photographed on February 20, 2022. Limitation to spread of this introduced orchid in the continental United States appears to be as yet undetermined minimum temperature for survival.

### News from British Columbia, Canada

Parts of densely forested British Columbia have been subject to fire with 1746 fires destroying 133,000 hectares (ref. Canadian Interagency Fire Centre). Severe lack of rainfall rendered the forest especially

vulnerable. Extremely hot weather as with max. 39.0°C during July in Penticton BC further increased fire risk but spring precipitation, especially in May and June, 2022 benefitted terrestrial orchids growing where there was adequate moisture. Correspondent, Anne Ginns, told us that a local patch of *Cypripedium* × *columbianum* had fruited most years but with the cool, wet spring in 2022, when there were flowers, no fruits developed possibly because the weather was unsuitable for pollinator flight. She also reported that a large population *Piperia unalascensis* had grown well on an exposed slope in response to the early precipitation but faltered and died back during the very hot summer weather.

### Food for Thought

Aiken, S.G. et al. (2007). Flora of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and Information Retrieval. NRC Research Press, National Research Council of Canada, Ottawa.  
<http://nature.ca/aflora/data>.

Applications in Plant Sciences 10 (5). Special Issue: Meeting the Challenge of Exceptional Plant Conservation: Technologies and Approaches. September-October 2022.  
<https://bsapubs.onlinelibrary.wiley.com/toc/21680450/2022/10/5>

Cameron, D.D., Preiss, K., Gebauer, G., and D.J. Read (2009). The chlorophyll-containing *Corallorhiza trifida* derives little carbon through photosynthesis. *New Phytologist* 183(2): 358–64. doi:10.1111/j.1469-8137.2009.02853.x

Claessens, J. and J. Kleynen (1998). Column structure and pollination of *Corallorhiza trifida* Chatelain (Orchidaceae). *Journal Europäischer Orchideen* 30(3):629–637.

Foster, A.C. et al. (2022). Disturbances in North American boreal forest and Arctic tundra: impacts, interactions, and responses. *Environmental Research Letters* 17: (2022) 113001. <https://doi.org/10.1088/1748-9326/ac98d7>

Godfree, R.C. et al. (2021). Implications of the 2019-2020 megafires for the biogeography and conservation of Australian vegetation. *Nature Communications* 12:1023. <https://doi.org/10.1038/s1467-021-21266-5>

Luecke, N.C. et al. (2022). Causes and consequences of differences in soil and seed microbiomes for two alpine plants. *Oecologia* 200: 385–396.  
<https://doi.org/10.1007/s00442-022-05271-z>

McKendrick, S.L., Leake, J.R., and D.J. Read (2000). Symbiotic germination and development of myco-heterotrophic plants in nature: transfer of carbon from ectomycorrhizal *Salix repens* and *Betula pendula* to the orchid *Corallorhiza trifida* through shared hyphal connections. *New Phytologist* 145: 539–548.

Werner, G.D.A. and E.T. Kiers (2015). Order of arrival structures arbuscular mycorrhizal colonization of plants. *New Phytologist* 205: 1515–1524. doi: 10.1111/nph.13092

Wetterer, S.K. and J.K. Wetterer (2022). Spread of the African spotted orchid *Oeceoclades maculata* in the New World. *Lankesteriana* 22(3): 215–224.  
doi: <http://dx.doi.org/10.15517/lank.v22i3.53113>

Williams, AP., Cook, B.J., and J.E. Smerdon (2022). Rapid intensification of the emerging southwestern North American megadrought in 2020-2021. *Nature Climate Change* 12:232–234. [www.nature.com/natureclimatechange](http://www.nature.com/natureclimatechange)

## Mark your Calendar

**MONOCOTS – 7th International Conference on Comparative Biology of Monocotyledons.**  
San José, Costa Rica, March 6–10, 2023

**IOCC VIII, Perth, Australia, 11–16 September, 2024** Details to follow.

## Orchid Specialist Group

<http://www.orchidspecialistgroup.com>

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### Changes to contact information?

To maintain effective communication, we need to know of any changes in contact information.

Please inform the OSG Chair, Mike Fay.  
([M.Fay@kew.org](mailto:M.Fay@kew.org))

### Call for conservation news

Members are invited to provide news of their recent conservation activities for publication in the OSG Conservation News.

Please submit material in Microsoft Word, and illustrations, if any, as separate jpeg files. If applicable, please include suggested captions and photographic credits. Send news to Marilyn Light, Editor, ([milight@distributed.net](mailto:milight@distributed.net))