

Rare Vascular Plants of Alberta. Second Edition

Edited by Gina Fryer, Jane Lancaster, Kimberly Ottenbreit, Christina Metke, Donna Cherniawsky, Amy Griffiths, Kristen Foreman, and Jenalee Mischkolz. 2022. Alberta Native Plant Council. Distributed in Canada by UBC Press. 664 pages, 548 colour photos, 508 illustrations, and 934 maps, 47.95 CAD, Paper.

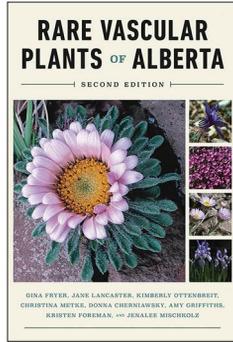
Alberta is a biodiverse province with an array of terrestrial and aquatic ecosystems including boreal forest, grassland, parkland, foothills, the Canadian Shield, and the Rocky Mountains. There are upwards of 2000 vascular plants that have been detected provincially (including subspecies and varieties), and this tally continues to grow as the flora

of the province is documented, the ranges of North American plants change, and our understanding of taxonomy advances. *Rare Vascular Plants of Alberta, Second Edition*, includes nearly 500 species profiles, with about 150 being new to this edition. Fryer *et al.* emphasize that a fifth of the province's native vascular plants are rare, and with this prevalence tools to identify rare plants are invaluable.

The book's beautiful cover has images of many rare plants and prominently features a charismatic photo of *Townsendia condensata* Parry on a rocky alpine slope. However, all the cover species occur in southwestern Alberta where there is a high concentration of rare plants that reach the northern and eastern extent of their ranges. It would have been beneficial to see province-wide representation on the cover to highlight vascular plant diversity in other ecological regions; Alberta's rare plants are not restricted to the southwestern Rocky Mountains, and rare plant occurrences are possible province-wide, including in human-impacted environments.

The guide opens with a comprehensive introduction of what rare plants are, the types of rare plants typically found within the province, a description of species conservation rankings, and a brief history of the published records of rare plants in Alberta. There is also guidance on how to conduct rare plant surveys and document occurrences in the province, highlighting the importance of reporting rare plant populations to the Alberta Conservation Information Management System (ACIMS).

Each species profile describes the rare plant's habitat and vegetative and reproductive features, with key attributes highlighted. Summaries of plant traits are written in common vernacular, making it easier for novice botanists to understand the diagnostic features of each rare species. Considering that many



of the species summaries were initially crafted by numerous individual volunteers, the primary authors did a great job ensuring plant morphology language was stylistically unified throughout the book. The Habitat descriptions provide detail on the soils, substrates, moisture regimes, plant community associations, and disturbance responses for many species, which are diagnostic for rare species that occupy a narrow niche. Every profile includes a short Notes section with interesting information on species ecology, contrasts with similar species, and other facts like the etymology of nomenclature. For rare plants that are federally listed as Endangered or Threatened under the *Species at Risk Act* (SARA), their statuses and threats are described in the Notes; however, these statuses are not boldly presented.

In addition, all species profiles include detailed illustrations. For most species, there are also high-quality photos of the plants (often in their natural environments) and additional photos of important diagnostic plant organs referenced in taxonomic keys, such as perigynia for *Carex* L. and fruits, leaves, and bulbs, etc. for other plants. There are a few cases where photos are out of focus or do not focus on diagnostic features. This occurs primarily in the section on Poaceae, which would have benefitted from diagnostic photos of spikelets and florets, much like the detailed photos included for Cyperaceae. However, with many of these species being rare and often inaccessible, it is understandable that access to ideal photos is limited. In the absence of photos, the illustrations that have been chosen highlight the diagnostic traits well.

For most species profiles, the guide also includes occurrence maps of the species across Alberta's main natural regions. These are valuable references for understanding where rare plant populations are known to occur, and the maps often illustrate how disjunct and widely distributed the occurrences of populations can be. Further context on a species' North American range is also provided; this is important as many rare plants in Alberta are at the extreme extent of their ranges. These maps can aid in confirming a species' identity in conjunction with its habitat and ecological description and alert botanists who detect novel populations to the importance of reporting occurrences.

To aid in the identification of some taxonomically challenging taxa—such as *Boechea* Á. Löve & D. Löve, *Eleocharis* R. Brown, *Carex* L., and *Potentilla* L.—the authors have compiled useful Conspectus

Tables to help compare key traits of similar species. These tables are useful tools to use in conjunction with dichotomous keys and pressed reference materials.

Noting that the species profiles are very well put together, there are some small drawbacks. The conservation status of each species is not described in the profiles; however, the authors do acknowledge in the introduction that ACIMS (2022) should be consulted for the current list and statuses of rare plants in Alberta. This will be apparent to people who have experience working with rare plants in the province, but it may be a barrier to novice botanists or people reviewing the guide from outside of Alberta. Further, the guide appears to have a complete inclusion of species ranked provincially as S1 (Critically Imperilled) and S2 (Imperilled), while species with an S3 (Vulnerable) status appear to be included at the discretion of the authors. An appendix of rare plants in Alberta, notations on whether species are included or excluded, and their statuses at the time of publication would have been beneficial.

Rare Vascular Plants of Alberta compliments the recent publication of *Vascular Flora of Alberta: an Illustrated Guide* by Linda Kershaw and Lorna Allen (2020), an illustrated dichotomous key that also indicates the conservation status of rare vascular plant species. Detailed species descriptions and range maps

are lacking in the illustrated key, which are important for confirming the keying of rare plants. The *Rare Vascular Plants of Alberta* guide fills this information gap well.

Rare Vascular Plants of Alberta, Second Edition, is an excellent resource for anyone working with plants in Alberta. With the comprehensive inclusion of Alberta's rarest plants, it empowers the people who monitor and manage the province's vegetational resources and ecosystems to detect and understand the ecology of rare plants. High-quality illustrations, photos, and plant summaries in common vernacular make this guide accessible to both novices and experienced botanists.

Literature Cited

- ACIMS (Alberta Conservation Information Management System). 2022. List of elements in Alberta—vascular plants. Accessed 1 July 2023. <https://open.alberta.ca/opendata/list-of-elements-in-alberta-vascular-plants>.
- Kershaw, L., and L. Allen. 2020. *Vascular Flora of Alberta: an Illustrated Guide*. Self-published. Kindle Direct Publishing.

LYSANDRA A. PYLE, PH.D.
Alberta Biodiversity Monitoring Institute
University of Alberta
Edmonton, AB, Canada