

Recent changes to Washington's flora: new taxa, arrivals, taxonomy, and nomenclature



David E. Giblin, Ph.D.
University of Washington Herbarium
BurkeMuseum

The background of the cover is a dark green color with a dense, repeating pattern of light green botanical illustrations. These include various types of leaves, ferns, and flowering plants, rendered in a detailed, scientific style. The text is centered and printed in white and light blue colors.

FLORA *of the*
PACIFIC
NORTHWEST

An Illustrated Manual

SECOND EDITION

**C. LEO HITCHCOCK &
ARTHUR CRONQUIST**

REVISED BY DAVID GIBLIN,
BEN LEGLER, PETER F. ZIKA,
AND RICHARD OLMSTEAD

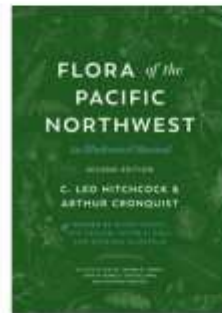
ILLUSTRATED BY JEANNE R. JANISH,
JOHN H. RUMELY, CRYSTAL SHIN,
AND NATSUKO PORCINO

Flora Project Website

www.pnwherbaria.org/florapnw.php



Sign In



Updating a seminal work of Pacific Northwest botany

The [University of Washington Herbarium at the Burke Museum](#) has completed a Second Edition of the *Flora of the Pacific Northwest*, based on the original manual published in 1973 by C. Leo Hitchcock and Arthur Cronquist. The Second Edition is available from the [University of Washington Press](#) and resellers.

The original, 730-page, single volume book was designed by the authors to be a portable plant identification manual for professional and amateur botanists. Even today it remains a singular piece of scholarship and a model for how to produce a flora. The Second Edition has been fully updated to include all native and naturalized taxa presently known from the region, with up-to-date nomenclature and classifications, while maintaining the original's familiar layout, styles, and use of illustrated keys.

Timeline and funding

Work on the Second Edition of the Flora began in 2013. All treatments and illustrations were completed in October, 2017, followed by final layout work by the UW Press in preparation for printing. The book was published in October, 2018.

The completed Flora covers 159 families, 1,141 genera and 5,335 terminal taxa, representing about 826 pages of content. New illustrations were commissioned for 1,379 taxa.

Project costs totalled slightly over **\$500,000** for content production (revising treatments and keys, acquisition of new illustrations), editing, layout and printing. Publishing and printing costs were shared with the University of Washington Press. Royalties from sales of the 2nd Edition received by the Herbarium will help support future work on the Flora, including subsequent revisions and complimentary online resources.

You can continue to support the Flora and future work on our region's flora by [volunteering your time](#) in the Herbarium or [making a donation](#).

Make a Donation!

Give online at the Burke Museum web site:

[Give Online](#)

(select Pacific Northwest Flora Revision)

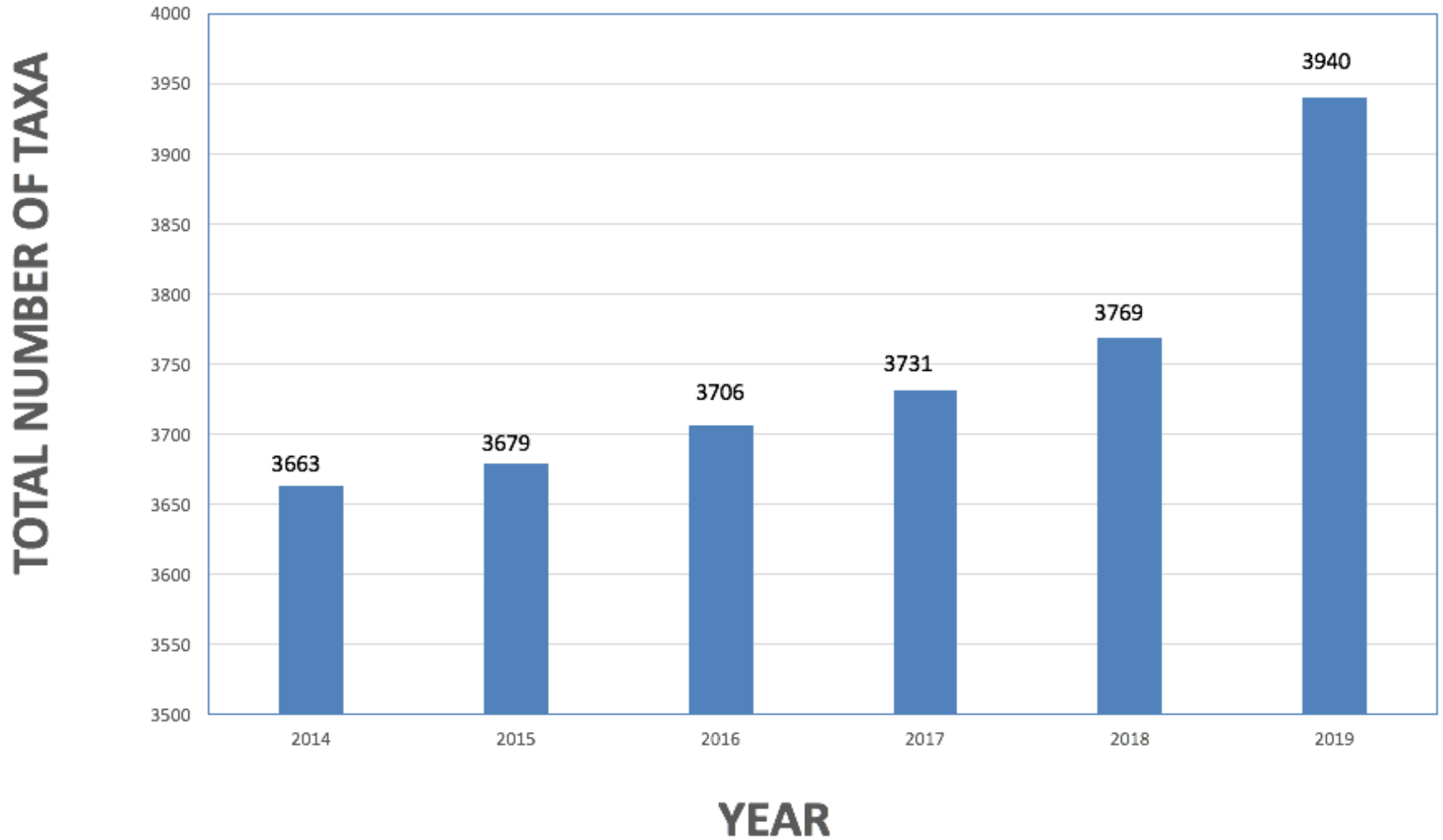
Total Project Costs: \$507,670 raised
(goal: \$500,000)

Amount	Goal
\$507,670	\$500,000

Printing Costs (subseq): \$27,500 raised
(goal: \$27,500)

Amount	Goal
\$27,500	\$27,500

Flora of Washington



Washington Flora Checklist: <http://biology.burke.washington.edu/herbarium/waflora/checklist.php>

WA Flora Checklist – Name Checker



Washington Flora Checklist

A Checklist of the Vascular Plants of Washington State

Hosted by the University of Washington Herbarium

Names Literature

[More search options...](#)

[Home](#) | [About](#) | [Statistics](#) | [Download](#) | [Name Checker](#) | [Literature](#)

Batch Name Checker

Use this tool to match a list of scientific names to the corresponding accepted names recognized by the Washington Flora Checklist and the 2nd Edition of the Flora of the Pacific Northwest. Names can be provided by manually entering them into the text box below, or by formatting them as a tab-delimited text file for upload. Use the text box option to check one or a few names; use the upload option to check larger lists of names. Additional instructions are provided below.

The nomenclatural tables used by the name checker are most complete for vascular plants of Washington state and adjacent areas of the Pacific Northwest, primarily those covered by the [2nd Edition of the Flora of the Pacific Northwest](#). Although our tables contain data for vascular plants outside the Pacific Northwest, along with macrofungi, lichenized fungi, algae, and bryophytes, we do not make an active effort to curate that data.

Manually enter names to check:

Enter one or more scientific names into the text box below, with each name on its own line. Do not include any other information besides the scientific name, optionally with question marks or 'sp.' qualifiers.

Upload a text file with names to check:

Names must be formatted as a tab-delimited text file, with a file type of .txt or .tab. The first line of the file must contain a header row with field names. Field names that are recognized by the name checker code are listed below; of these, the only required field is ScientificName. The text file may also contain other fields; these fields will be included, unmodified, in the output file. Field names can be in any order.

Sources of 2018 increases

- Primarily changes/updates from revised *Flora*
- Several waif taxa
- Newly described taxa: 3 *Lomatium* spp.
- Range extensions of non-native and native species

New *Lomatium* species

- *Lomatium roneorum* Darrach
- Near Leavenworth

Darrach, M.E. 2018. *Phytoneuron* 2018-78: 1–12.

Lomatium roneorum



Photos by Connie McCauley

New *Lomatium* species

- *Lomatium roneorum* Darrach
- Near Leavenworth

Darrach, M.E. 2018. *Phytoneuron* 2018-78: 1–12

- *Lomatium papilioniferum* J.A. Alexander & W. Whaley
- segregate of *L. grayi*, which no longer occurs in WA
- broadly distributed

- *Lomatium klickitatense* J.A. Alexander & W. Whaley
- segregate of *L. grayi*
- Klickitat Co. and adjacent OR

Alexander, J.A., and W. Whaley. 2018. *J. Bot. Res. Inst. Texas* 12(2): 387 – 444.

L. papillioniferum/*L. klickitatense*



Lomatium papillioniferum
Photo by Rod Gilbert

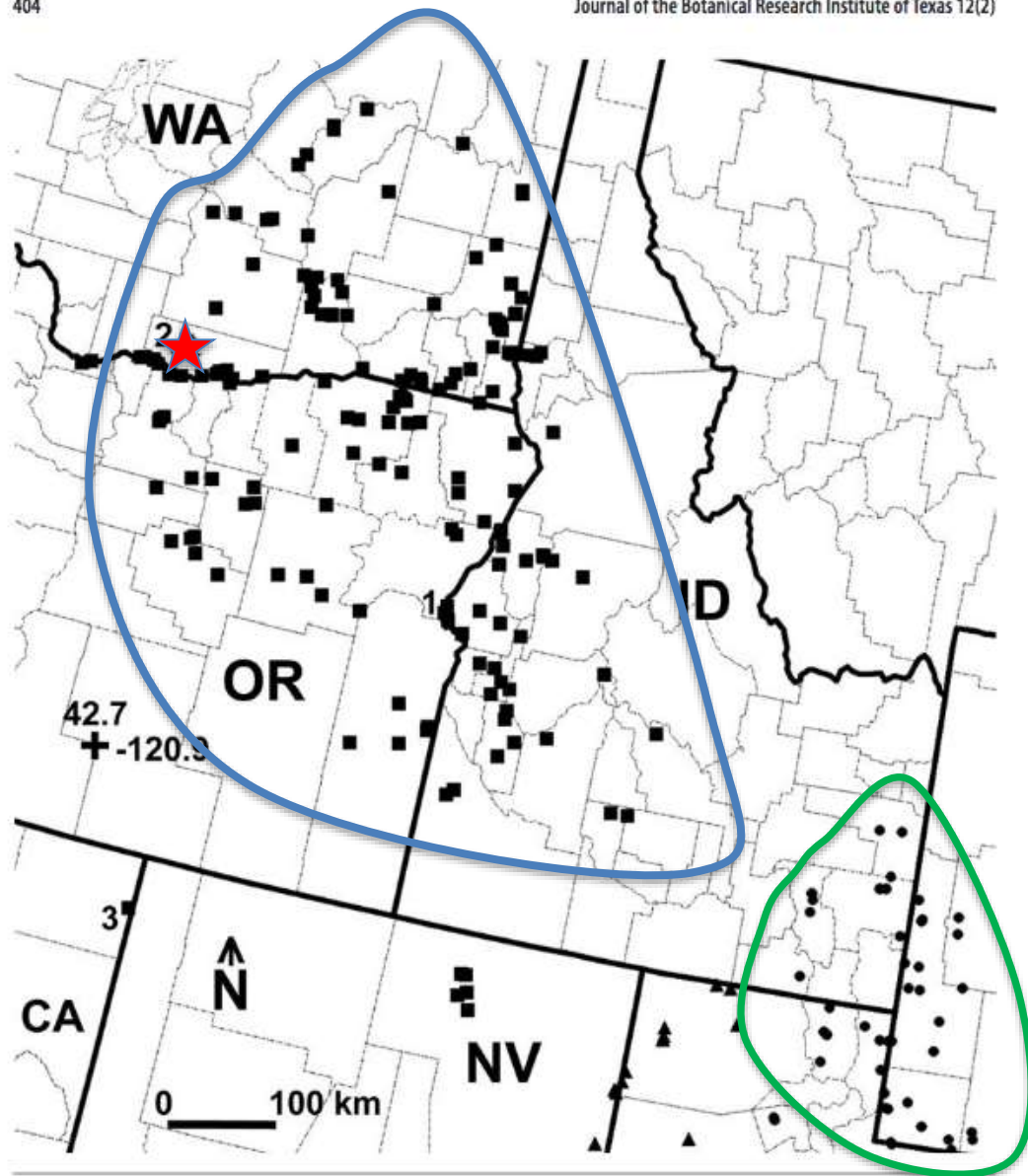
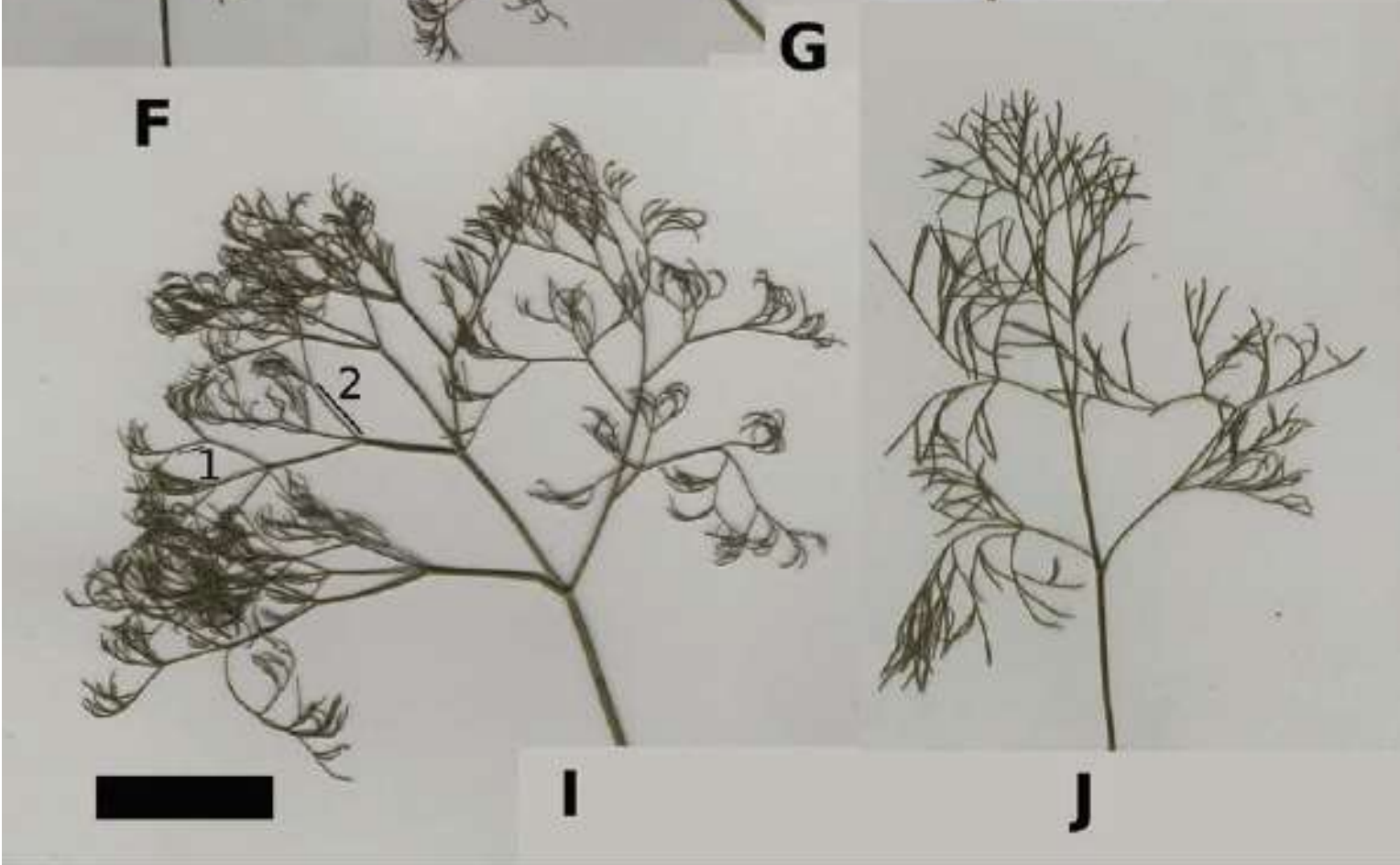
L. papilioniferum*L. klickitatense**L. grayi*

FIG. 8. Regional distribution map of *Lomatium papilioniferum* (squares) in the Pacific Northwest of the western United States. The long-disjunct population on islands adjacent to Vancouver Island in British Columbia, Canada is not shown, far to the upper left of the left-hand corner of the map. For reference, the populations of *L. klickitatense* (stars) are shown on the left and in the lower right had corner are disjunct populations of *L. grayi* (circles) and *L. depauperatum* (triangles). Marker 1 is the type locality of *L. papilioniferum*. Marker 2 is indicated the location of the distribution map of *L. klickitatense* (see Fig. 7). Marker 3 is the location of the long-disjunct population of *L. papilioniferum* in the valleys east of the Warner Mountains, Modoc County, California (mapped but not included in the morphometric analyses).

L. papilioniferum



L. klickitatense



Newly Documented Non-Native Taxa

- *Bacopa rotundifolia* (Plantaginaceae) – Benton Co.
- *Limnobium laevigatum* (Hydrocharitaceae) – Pacific Co.
- *Lolium persicum* (Poaceae)– Clark Co.
- *Carduus pycnocephalus* (Asteraceae) – Clallam Co.

Bacopa rotundifolia (disk water hyssop)



Photos by Peter Zika

Distribution of *B. rotundifolia* in PNW



Limnobiium laevigatum (West Indian spongeplant)



Photo by Peter Zika



Photo by Jenifer Parsons

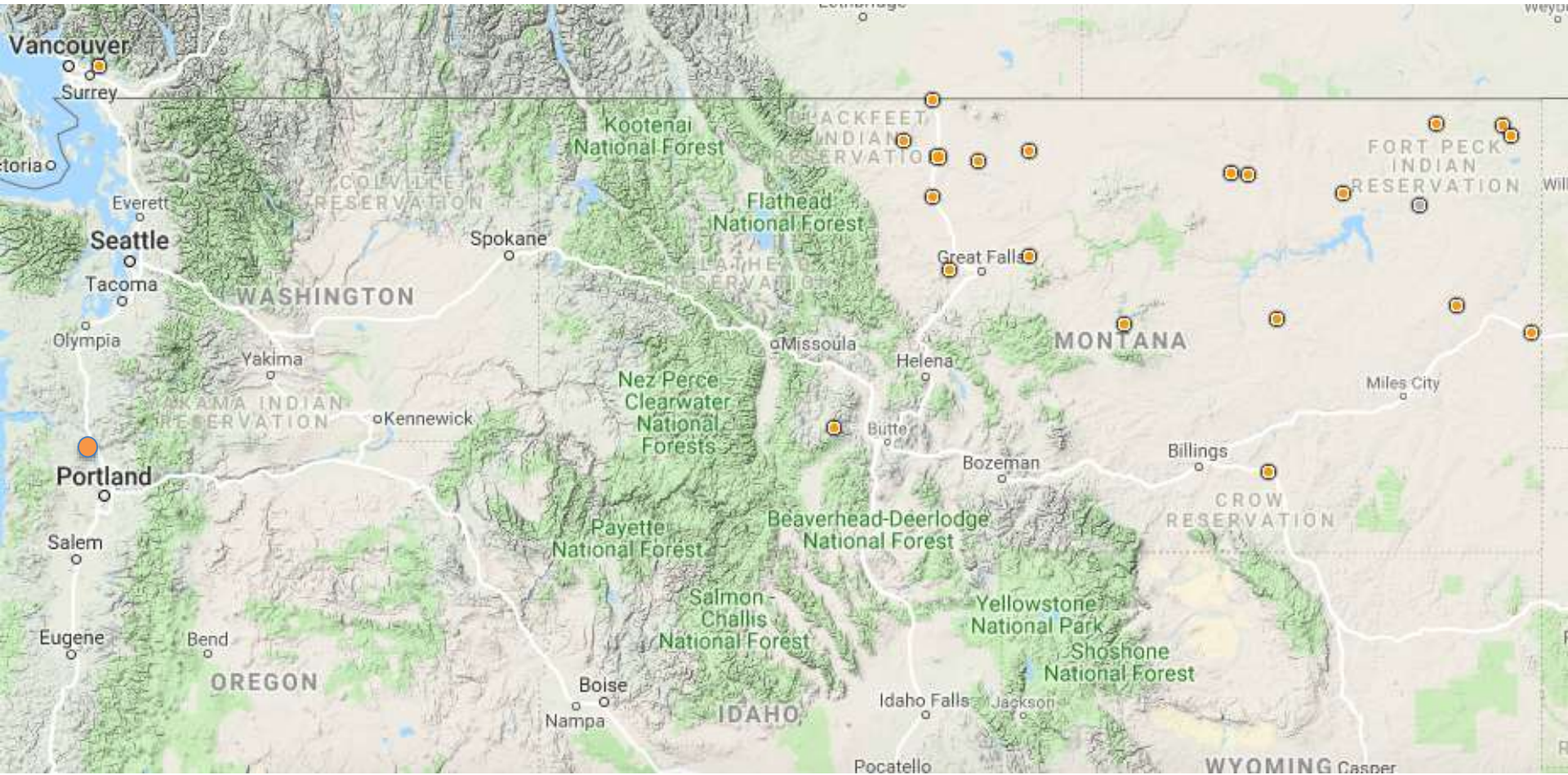
L. laevigatum in North America



Lolium persicum (Persian ryegrass)

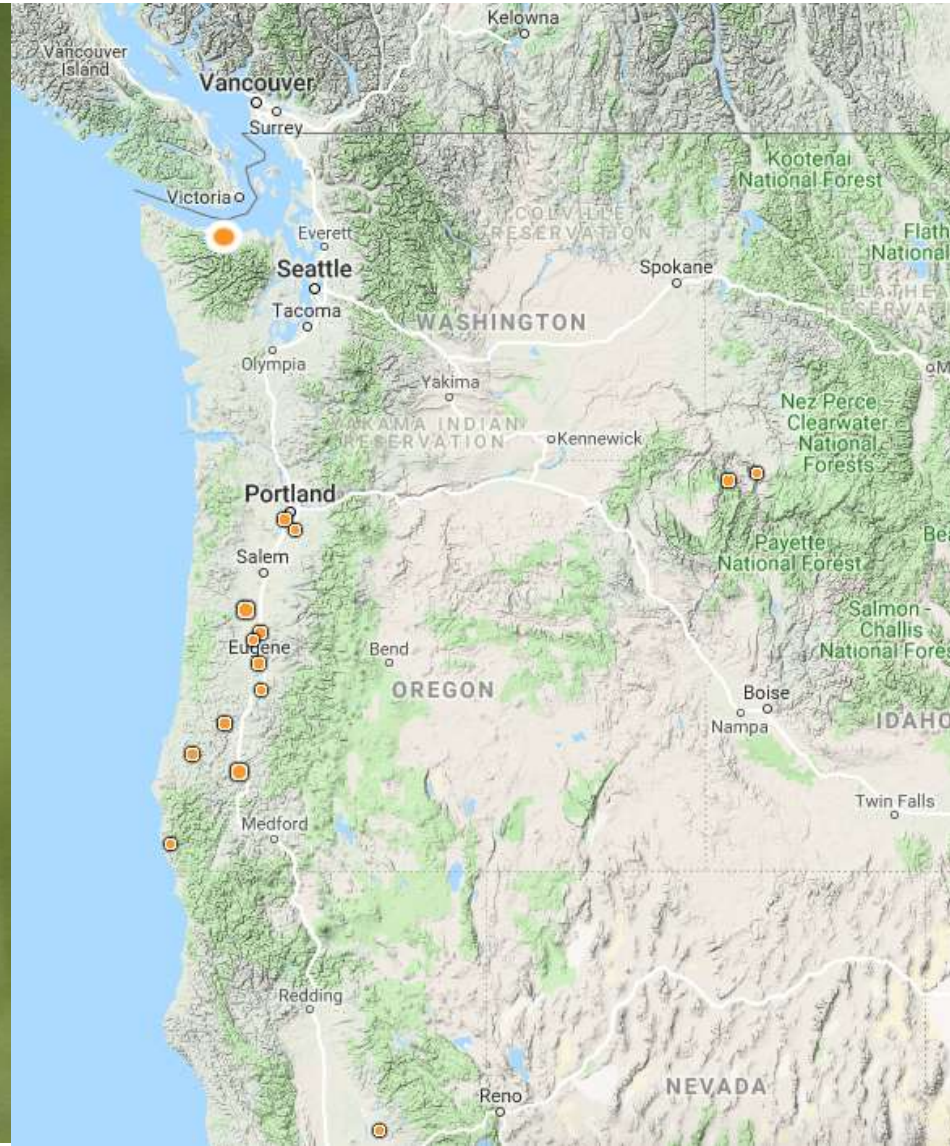


Distribution of *L. persicum* in PNW



Carduus pycnocephalus

Italian thistle



Carduus tenuiflorus



Newly Documented Native Taxa

- *Lithospermum incisum* (Boraginaceae) – Okanogan Co.
- *Myosurus sessilis* (Ranunculaceae) – Klickitat Co.
- *Rorippa sphaerocarpa* (Brassicaceae) – Skamania Co.

L. incisum

Photo by PetrifiedForestNPS

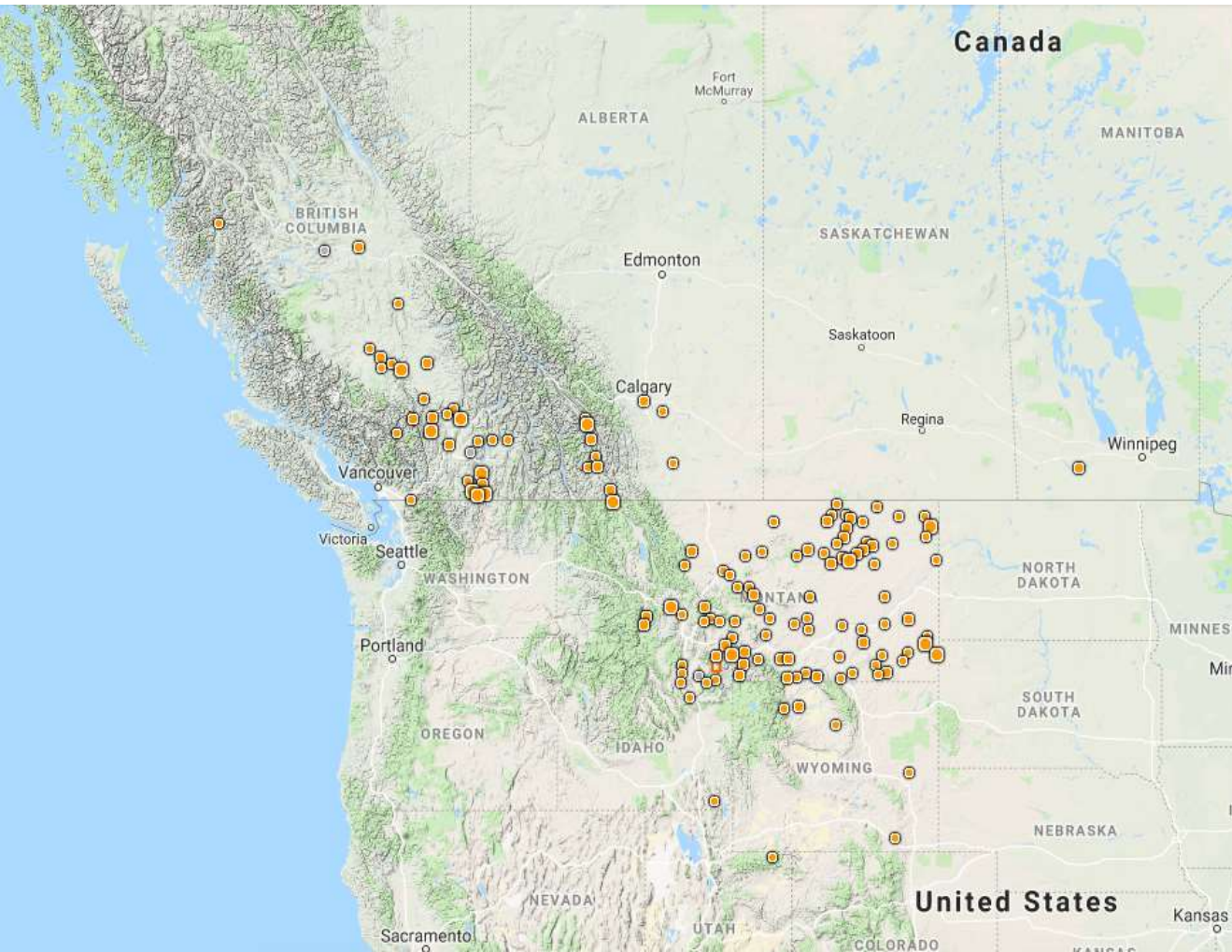


L. ruderale

Photo by
G.D. Carr



Lithospermum incisum distribution in PNW

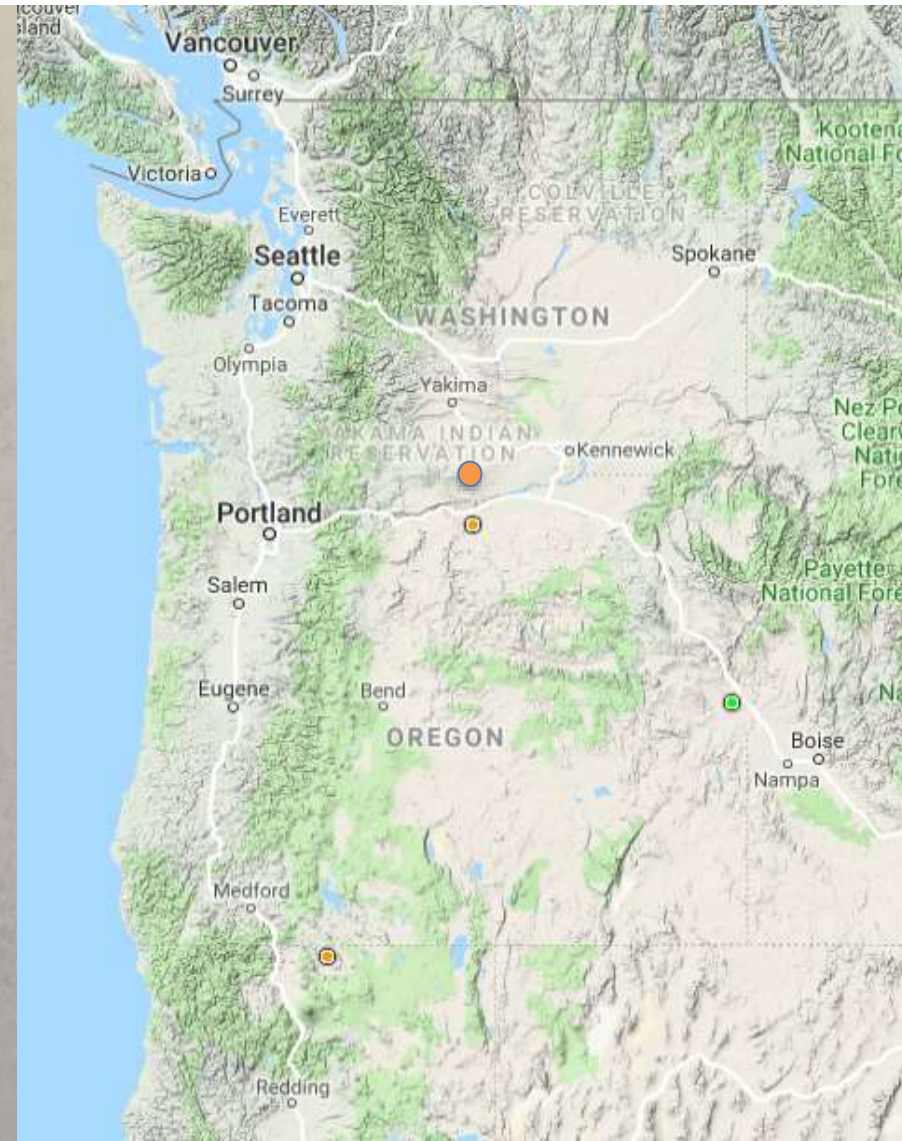


Myosurus sessilis in PNW (vernal pool mousetail)

Photo by Karen Brimacombe



Myosurus sessilis ?
Myosurus clavicaulis
near Bickleton, WA
6/11/18
Karen Brimacombe



Rorippa sphaerocarpa (roundfruit yellowcress)



Photo by
Barry Breckling

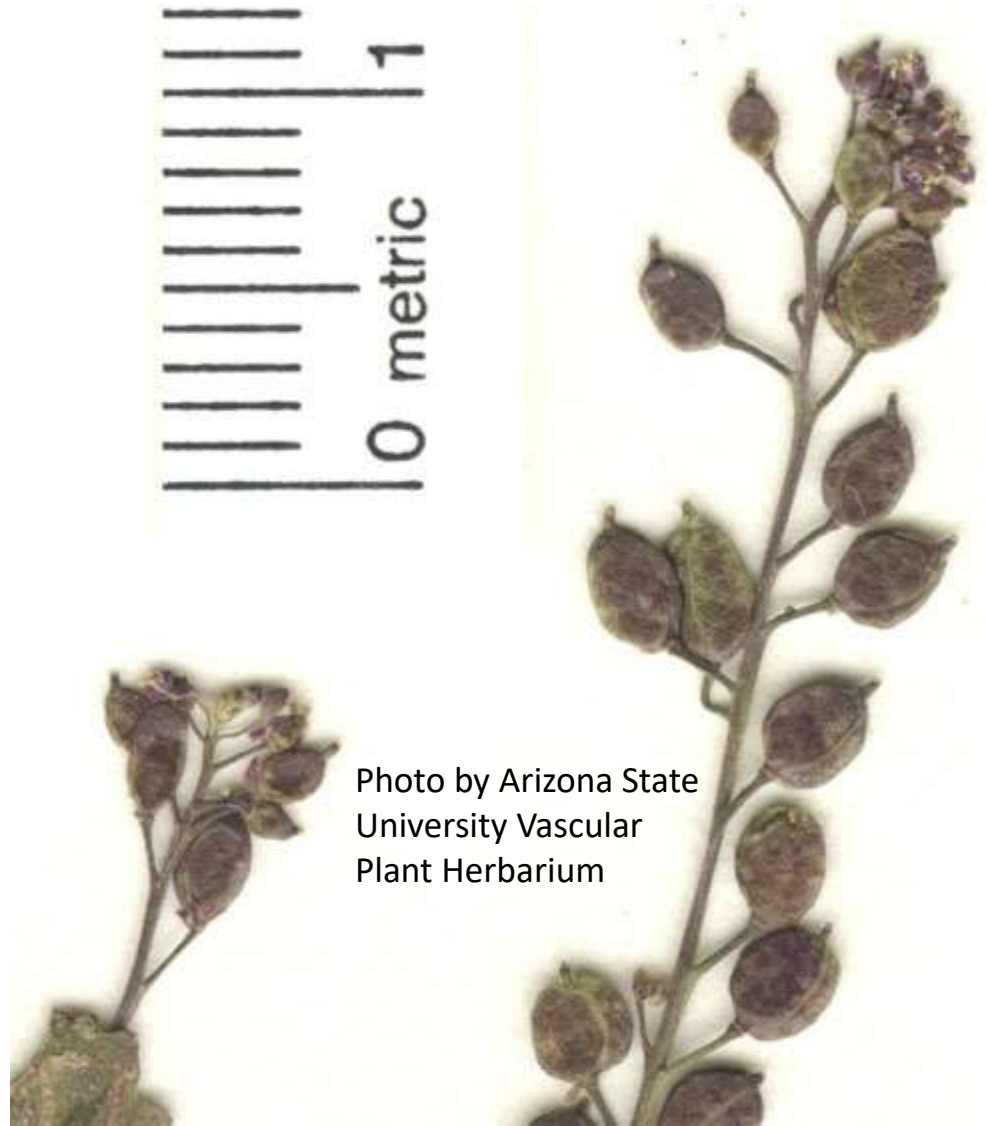


Photo by Arizona State
University Vascular
Plant Herbarium

Disjunction of *R. sphaerocarpa*



Notable Nomenclatural Changes

- *Rubus parviflorus* → *Rubus nutkanus*



Notable Nomenclatural Changes

- *Rubus parviflorus* ← *Rubus nutkanus*



Spatial phylogenetics of the native California flora

Thornhill et al., 2017. BMC Biol. 15: 96.

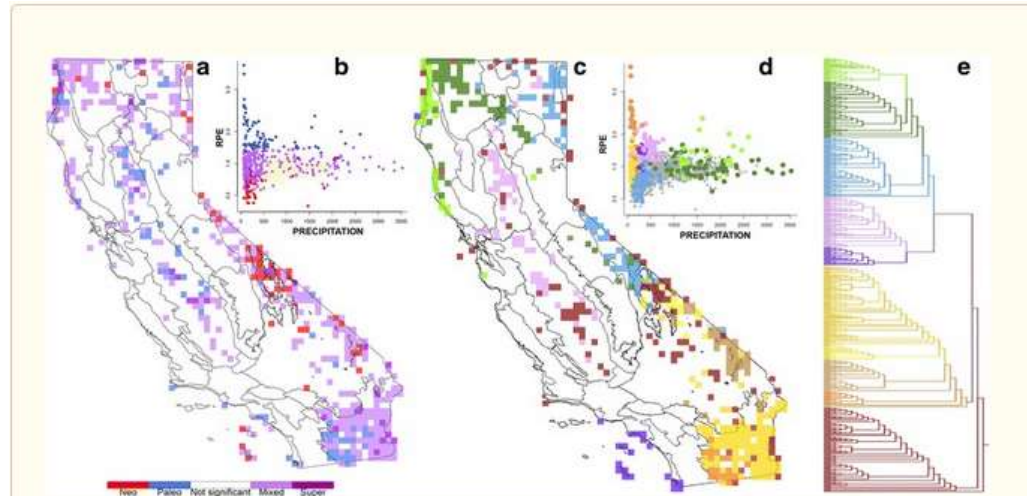


Fig. 3

Results of CANAPE analysis of all vascular plants, mapped with an overlay of the Jepson bioregions of California. **a** 15×15 km grid cells colored that showed significantly high phylogenetic endemism (PE) in CANAPE; *red* shows centers of neo-endemism, *blue* shows centers of paleo-endemism, and *two shades of purple* show two levels of mixed endemism. **b** A scatterplot showing annual precipitation versus relative phylogenetic endemism (RPE), colored to match the cells in **a**. **c** A range-weighted phylogenetic turnover analysis among cells that showed significant phylogenetic endemism in CANAPE. The colors indicate the corresponding clusters in **e** and show five major groupings. The primarily northwest cells (*dark green*) and northern coast cells (*light green*) together form a distinct cluster most similar to the Great Basin Desert cluster (*light blue*), while the northern Great Valley cells cluster (*pink*) with the Channel Island and south coast cells (*purple*). The desert cells form five distinct clusters (*yellows, orange, browns*). Many geographically dispersed cells did not form a distinct cluster (*maroon*). **d** A scatterplot showing annual precipitation versus RPE, colored to match the corresponding clusters in an Unweighted Pair Group Method with Arithmetic Mean (UPGMA) cluster analysis based on range-weighted phylogenetic turnover, colored to match the corresponding cells in **c** and **d**; cells that cluster together closely share similar branches in the phylogeny. Significantly high PE is concentrated in low precipitation environments, except for the northwest, probably indicating different processes affecting endemism in different lineages and in different locations

Acknowledgements

- Ben Legler
- WSDA Nursery Research Program (Cindy Cooper, Lara Massey)
- Wendy DesCamp, Peter Dunwiddie, Walt Fertig, Jenifer Parsons, Peter Zika
- Nygren Family Endowment for the Herbarium