



# Using the PNW Herbaria web site to study Washington's flora: tools, tips and tricks

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

Alaska  
British Columbia  
Idaho  
Montana  
Oregon  
Washington  
Yukon Territory

## Development of the PNW Herbaria web site

- Started in 2007 to provide a single access point to herbarium specimen data for the Pacific Northwest and to promote collaboration among herbaria.
- The initial web site hosted 700,000 specimen records from three herbaria (U. of Alaska, Oregon State U., U. of Washington).

The image displays several screenshots of the Consortium of Pacific Northwest Herbaria website. The central screenshot shows the main search portal with a search bar, a map of the Pacific Northwest region, and a list of search results for 'Arctostaphylos'. The results list specimen numbers, dates, and collector names. Other screenshots show the 'About' page, a detailed specimen record, and a list of member herbaria.

**Search Results:**

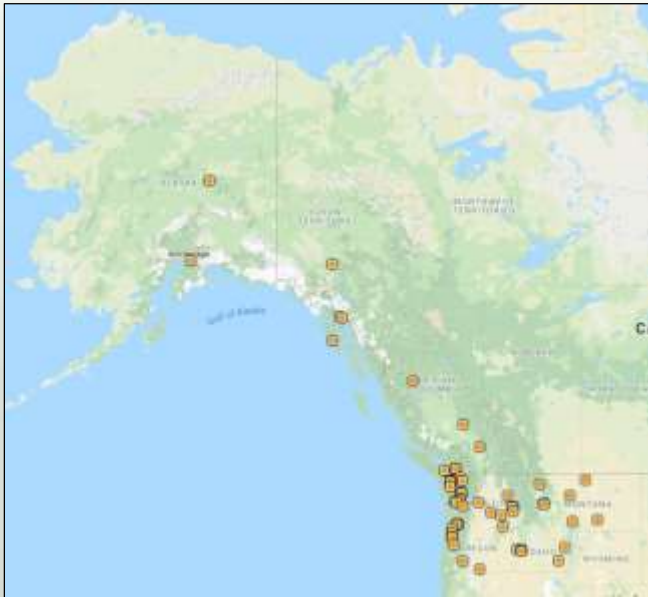
Search results: 648 matching records.
Search query: Scientific Name = Arctostaphylos
Data provided by: GSD (54 records), UAM (119 records), UO (575,494 records)

**Specimens map: 178 specimens displayed.**

Search results:
1. <i>Arctostaphylos</i> sp. Eticaceous USA, Washington, Skamania County: On road 1604 to Lolo Beds from Winder A. R. Kewickberg 6491, 6/24/1976, UWBM 126175
2. <i>Arctostaphylos</i> sp. Eticaceous USA, Washington, Skamania County: Southeast pronglet of Big Lolo Beds, just off United States Forest Service Road 1604 A. R. Kewickberg 6492, 6/24/1976, UWBM 126222
3. <i>Arctostaphylos</i> sp. Eticaceous USA, Washington, Skamania County: Southeast pronglet of Big Lolo Beds, just off United States Forest Service Road 1604 A. R. Kewickberg 6491, 6/24/1976, UWBM 126226
4. <i>Arctostaphylos</i> sp. Eticaceous USA, Washington, Skamania County: On road 1604 to Lolo Beds south of Zigzag A. R. Kewickberg 6478, 6/24/1976, UWBM 126227
5. <i>Arctostaphylos</i> sp. Eticaceous USA, Oregon, Clatsop County: Along Lolo Pass Road, 4 miles southwest of Zigzag on Lolo Pass road A. R. Kewickberg 6478, 6/24/1976, UWBM 126229
6. <i>Arctostaphylos</i> sp. Eticaceous USA, Oregon, Clatsop County: At Riley campground, 8 miles southwest of Zigzag on Lolo Pass road A. R. Kewickberg 6478, 6/24/1976, UWBM 126229

**PNW Herbaria now hosts 2.8 million specimen records and provides access to over 1.2 million specimen images.**

- Represents about 70% of all specimens in all herbaria in the region.
- 39 herbaria now share data through PNW Herbaria (out of 68 herbaria total)
- Includes specimen data from all of the region's larger herbaria and many of the smaller herbaria.



Locations of herbaria in the Pacific Northwest



Geographic distribution of all georeferenced specimens

## PNW Herbaria web site funding

- Supplement NSF grant was awarded to UW Herbarium in 2007 for initial web site and database development.
- A collaborative NSF grant (2010-2013) funded extensive digitization and infrastructure development.
- Funding and support from 2014 onward has been very minimal, mostly covering basic maintenance work and integration of a few additional herbaria.
- We currently do not have sustainable sources of funding to maintain and further develop the PNW Herbaria resource.
- The database continues to grow through ongoing digitization efforts at various regional herbaria.

## Who uses the data?

- Government agencies: Natural Heritage Programs, Forest Service, BLM, Fish & Wildlife, noxious weed control boards.
- Academic research: systematists, taxonomists, field botanists, ecologists.
- Herbarium personnel: collections managers, staff, volunteers.
- Higher education: undergraduates, teaching assistants, faculty.
- Private consultants.
- Native plant nurseries.
- Citizen science programs: invasive species, Rare Care.
- Native plant societies, amateur botanists, hikers.

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*Delphinium glaucosum*

## Herbarium specimens from the Pacific Northwest

2,787,205 specimen records and 1,434,320 images from 39 herbaria.

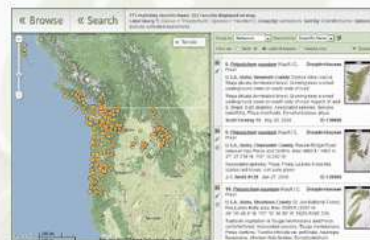


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### About Us

The Consortium of Pacific Northwest Herbaria was created in 2007 to bring together regional herbaria and provide an online portal to the wealth of existing and emerging information about the flora of Pacific Northwest North America. Over 3.6 million specimen records and numerous online electronic resources are managed by the region's 60 herbaria, representing an irreplaceable storehouse of information for research and public education. [More...](#)

### Search the database:



### Specimen Data:



#### Specimen Database

Search for herbarium specimens by label data or geographic location. Results show full label data, images of specimens sheets, and a distribution map. Results can also be downloaded or distilled into a species checklist.



#### Data for Download

Download text files containing the label data for all specimen records in the Consortium database, or for individual herbaria.

### Compiled Resources:



#### Species Checklists by County

Create species lists for any counties in Washington, Oregon, Idaho, or Montana. Lists can include vascular plants, bryophytes, lichens, algae, and/or fungi.



#### Datasets for Mobile Devices

View or download pre-packaged datasets intended for use on mobile devices without an internet connection. Includes county checklists, distribution maps, and specimen label data.

### Documentation & Links:



#### Specimen Imaging Documentation

Learn how CPNWH images herbarium specimens. Included are detailed descriptions of our equipment and workflows. Software scripts are available for download.



#### Collections Digitization Documents

A comprehensive list of documents and links relevant to digitizing biological collections, particularly herbarium specimens. Maintained by the Consortium of Northeast Herbaria.

## Future development and directions

- Create an online interface allowing users to report misidentifications, misplaced georeferences, and data errors.
- Search by uploading or entering a list of multiple species names.
- Search by uploading a shape file defining a geographic area to search.
- Improve usability of search page on mobile devices to allow easier access in the field or while traveling.
- Provide a way for agencies to easily search for recently added specimens of high-interest taxa such as rare plants or noxious weeds.
- Develop a synonymized checklist for the Pacific Northwest flora.
- Develop curated datasets accurately documenting species' distributions.
- Develop tools to gather and display good-quality observation records to augment the specimen data.
- Allow users to create species lists for their sites and observations.

## Current web site:

- Specimen search form: search by scientific name, synonymy, location, other label data; group/sort records.
- View specimen images.
- Log-in access to restricted locality data.
- Create species checklists from search results.
- Create species checklists by county.
- Download search results.
- Bulk data downloads.
- Load data onto a mobile device for use in the field.
- Generic synonymized checklist.
- Contact info for regional herbaria.
- Links to online resources managed by regional herbaria.

## Feature wish list:

- Interface to report errors/corrections.
- Search by multiple species names.
- Search by shape file.
- Improve usability on mobile devices.
- Search for rare plant or noxious weed records.
- Checklist for PNW flora.
- Curated species' distribution datasets.
- Add observation records.
- User-created species lists.
- Close-ups of specimen images
- View by collection date within year
- Clean up and add georeferences
- Add map layers: geology, vegetation, topo.