



GRAND CANYON
TRUST

PLANT IDENTIFICATION RESOURCES

FOR THE COLORADO PLATEAU

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ALL PHOTOS BY MARC COLES-RITCHIE

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The following is a list of books, apps and websites that are useful in identifying plants in the Colorado Plateau. The author works mostly in Utah, so that geographical area is well represented in this list. An asterisk (*) indicates field guides and apps the author recommends for use in the field by beginning and intermediate botanists. A glossary and some references are listed after the table.

Note: floras are the most complete plant identification resources, but since most casual botanists shy away from the highly technical botanical terms, the floras are at the end of this list.

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TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
Forbs/Wildflowers (may include some shrubs, trees, and grasses)			
<i>A Field Guide to the Plants of Arizona</i>	Arizona	Color photographs and descriptive text for 850 plant species found in Arizona.	Anne Orth Epple. Falcon Guides, 1997.
* <u>Capitol Reef Wildflowers</u>	Central Utah	Field guide to 209 plants of the Capitol Reef area, with color photographs; includes 48 endemic species.	Deborah J. Clark. Published by Impact Photographics Inc. 2009.
<u>Rocky Mountain Flora: A Colorado Mountain Club Field Guide</u>	Colorado	Organized by color, with images, taxonomy, and detailed descriptions of each flower.	James Ells. Colorado Mountain Club, 2012.
* <i>Sandstone Country Wildflowers Mountain Edition: A Field Guide to the Wildflowers of the Moab Region and Beyond</i>	Southeast Utah and adjacent states	Descriptions and color photos for many of the common wildflowers and shrubs of the foothills and mountains of southeastern Utah.	Anne Duri and Dave Montgomery. Red Shoe Guides, 2018.
* <i>Sandstone Country Wildflowers: The Red Shoe Guide</i>	Southeast Utah and adjacent states	Descriptions and color photos for 135 of the common wildflowers and shrubs of the canyons, cliffs, and mesas of southeastern Utah.	Anne Duri and Dave Montgomery. Red Shoe Guides, 2015.
* <u>Spring Wildflowers of Utah's Red Rock Desert</u>	Southeast Utah and adjacent states	Features 500 common spring wildflowers, trees and grasses of the red rock desert with photographs and full descriptions of about half these plants.	Peter Lesica and Walter Fertig. Published by Trillium Press, 2018.
* <u>Wildflowers & Other Herbaceous Plants of Utah Rangelands: A Field Guide</u>	Utah	A handy booklet with descriptions and color photos of 83 of the common wildflowers in Utah.	Roger Banner, Mindy Pratt, James Bowns, and Chad Reid. Utah State University Cooperative Extension, Logan, UT, 2013.
<i>Wildflowers of the Mountain West</i>	New Mexico, Colorado, Wyoming, Idaho, Utah, Nevada and Oregon	Descriptions and color photos organized by flower color.	Richard M. Anderson, JayDee Gunnell, Jerry L. Goodspeed. Utah State University Press, Logan, UT, 2012.

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Woody Plants (trees and shrubs)			
* <i>Pocket Guide to Sagebrush</i>	Western U.S.	A small, handy booklet with descriptions, drawings, and color photos of most sagebrush species of the Western U.S.	Leila Shultz. PRBO Conservation Science, 2012.
<i>Rocky Mountain Region Willow Identification Field Guide</i>	Colorado and Wyoming and east to 100th meridian	Dichotomous keys, descriptions, color photos of 36 willow species of the Rocky Mountains.	Robert D. Dorn. USDA Forest Service, Rocky Mountain Region, Denver CO, 1997.
<i>Sagebrush of Colorado: taxonomy, distribution, ecology & management</i>	Colorado	Dichotomous keys, descriptions, color photos, of all sagebrush species of Colorado.	Alma H. Winward. Colorado Division of Wildlife, Department of Natural Resources, 2004.
<i>Trees of Utah and the Intermountain West: A Guide to Identification and Use</i>	Utah and surrounding states	Dichotomous keys, descriptions and drawings of 219 trees species found in Utah, which includes all native species and some introduced species.	Michael Kuhns. Utah State University Press, Logan, Utah, 1998.
* <i>Woody Plants of Utah: A Field Guide with Identification Keys to Native and Naturalized Trees, Shrubs, Cacti, and Vines</i>	Utah	Dichotomous keys, descriptions and color photos of all 385 native woody species of Utah and some introduced species.	Renee Van Buren, Janet G. Cooper, Leila M. Shultz, and Kimball T. Harper. Utah State University Press, Logan, Utah, 2011.

TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
Graminoids (grasses and grass-like plants)			
<i>Field Guide to Intermountain Rushes</i>	Utah, Nevada, southeastern Oregon, western Wyoming and southern Idaho	Descriptions, drawings, and color photos of 23 of both common and less abundant rushes.	Emerenciana G. Hurd, Sherel Goodrich, Nancy L. Shaw. USDA Forest Service, 1997.
<i>Field Guide to Intermountain Sedges</i>	Utah, Nevada, southeastern Oregon, western Wyoming and southern Idaho	Descriptions, drawings, and color photos of about 112 of both common and less abundant sedges.	Emerenciana G. Hurd, Nancy L. Shaw, Joy Mastrogiuseppe, Lynda C. Smithman, Sherel Goodrich. USDA Forest Service, 1998.
* <i>Grasses and Grasslike Plants of Utah: A Field Guide</i>	Utah	A compact, spiral-bound booklet handy to carry in a daypack, with descriptions and color photos of 53 of the common grass and grass-like plants of Utah.	Roger Banner, Mindy Pratt, and James Bowns. Utah State University Cooperative Extension. Logan, UT. Second edition in 2011.
<i>Grasses of the Intermountain Region</i>	Utah and area between the Sierra Nevada and Rocky Mountains	Technical botany book with dichotomous keys, descriptions, drawings, maps, for nearly all grass species of the Intermountain Region.	Laurel K. Anderton and Mary E. Barkworth. Utah State University Press, Logan, UT, 2009.
Apps (free for phone and tablet)			
iNaturalist	international	App links to the iNaturalist.org website where you can post photos of plants and others will identify them.	
PlantNet	international	Allows you to upload photos of plants and see possible species that match. Others will offer identifications as well.	
PlantSnap	international	Allows you to upload photos of plants and see possible species that match. Others will offer identifications as well.	
* Wildflower Identification App	Utah, Colorado, New Mexico and Arizona (separate app for each state)	Includes photos, distribution maps and brief descriptions for most plants of the state of interest. You can enter criteria (such as location, flower color and date) and possible plants will be shown.	WildflowerSearch.org

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Web sites			
Flora of North America	North America	Keys, descriptions, distribution maps and images of all plants of North America.	http://www.efloras.org/flora_page.aspx?flora_id=1
iDigBio	International	Data and images for millions of biological specimens are available in electronic format.	https://www.idigbio.org/
iNaturalist.org	International	You can post photos of plants and others will identify them.	https://www.inaturalist.org/
Intermountain Region Herbaria Network	Region between the Sierra Nevada and the Rocky Mountains	Descriptions, images of specimens, distribution maps of species of the intended area.	http://intermountainbiota.org/portal/index.php
Southwest Colorado Wildflowers	Colorado, New Mexico, Arizona & Utah	Images, basic descriptions and distribution maps of wildflowers, shrubs, trees and ferns of the intended area. Searches can be done according to criteria such as flower color, leaf type, and habitat.	http://www.swcoloradowildflowers.com/index.htm
USDA PLANTS Database	U.S.	Database with basic information and maps of all plants in the U.S.	https://plants.sc.egov.usda.gov/java/
Utah Native Plant Society	Utah	Resources about native plants and rare plants of Utah.	https://www.unps.org/index.html
Utah Wildflowers	Utah	Photos of some of the beautiful wildflowers of Utah (Capitol Reef National Park in particular).	https://user.xmission.com/~nelsonb/wildflower.htm
Wildflower Search	North America	Includes photos, distribution maps and brief descriptions for most plants of the state of interest. You can enter criteria (such as location, flower color and date) and possible plants will be shown. This organization also produces the Wildflower Identification App (for individual states) listed above.	https://wildflowersearch.org/
Wildflowers of Utah	Utah	Photos and basic descriptions of wildflowers of Utah.	https://www.americansouthwest.net/plants/wildflowers/utah.shtml

TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
Weeds			
<i>An Illustrated Guide to Arizona Weeds</i>	Arizona	Information on identification, land-use factors, and control methods for weeds of Arizona.	Kittie F. Parker, University of Arizona Press; 2nd ed. Edition, 1972
<i>Colorado Noxious Weeds</i>	Colorado	Descriptions and images of 105 noxious weeds of Colorado.	Center for Invasive Species and Ecosystem Health. Invasive.org
<i>Noxious Weed Field Guide for Utah</i>	Utah	Photos and basic descriptions of 54 weeds of Utah.	Brenda Jarvis Lowry, Corey V. Ransom, Ralph E. Whitesides, and Heather Olsen. Utah State University Cooperative Extension, Logan, UT, 4th edition.
<i>Troublesome Weeds of New Mexico</i>	New Mexico	Descriptions, maps and photos of 45 weeds of New Mexico.	Jamshid Ashigh, James Wanstall and Frank Sholedice College of Agricultural, Consumer and Environmental Sciences, New Mexico State University, 2010.
<i>Weeds of the West</i>	Western U.S.	Basic descriptions and color photos of about 300 unwanted plants, particularly concerned with areas around homes and farms (mostly introduced plants but interestingly, it includes a few native plants).	Tom D. Whitson, Larry C. Burrill, Steven A. Dewey, David W. Cudney, B.E. Nelson, Richard D. Lee, Robert Parker. Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services and the University of Wyoming, 2012.

TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
Wetland Plants			
<i>Common Wetland Plants of Colorado's Southern Rocky Mountains: A Pocket Guide</i>	Colorado	Descriptions, drawings and photos for 284 wetland species of southern Colorado.	Denise R. Culver. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO, 2018.
<i>Common Wetland Plants of Colorado's Western Slope: A Pocket Guide</i>	Colorado	Descriptions, drawings and photos for 159 wetland species of Western Colorado.	Denise R. Culver. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO, 2018.
<i>Field Guide to Colorado's Wetland Plants: Identification, Ecology and Conservation</i>	Colorado	Descriptions, distribution maps, drawings and photos of 639 aquatic and wetland plant species of Colorado.	Denise R. Culver & Joanna M. Lemly. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO, 2013.
Rare Plants			
<i>Arizona Rare Plant Guide</i>	Arizona	Descriptions of more than 125 rare species of Arizona, with phenology, management responsibility, range, drawings, and color photos.	A collaboration of agencies and organizations produced this guide, published by the U.S. Government Printing Office, 2001.
<i>Colorado Rare Plant Guide</i>	Colorado	Descriptions of 173 rare plants of Colorado, including phenology, distribution (text and a map), habitat, conservation issues, photographs, and technical botanical artwork.	Colorado Natural Heritage Program. 1997+. Colorado Rare Plant Guide. Latest update: August 30, 2019.
<i>New Mexico Rare Plants</i>	New Mexico	Descriptions of 237 rare plants of New Mexico with maps and conservation considerations.	New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM. Latest update: 12 February 2019.
<i>Utah Rare Plant Guide</i>	Utah	Descriptions of 289 rare taxa of Utah, including maps and photos.	Utah Native Plant Society. 2003-2020. Utah rare plant guide. [Internet]. Frates AJ, editor/coordinator. Salt Lake City, UT.

TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
Floras (highly technical)			
<i>A Utah Flora</i>	Utah	Technical botany book with dichotomous keys and descriptions for 3,000 species, which includes all the native species and some (about 500) introduced species.	Stanley L. Welsh, N. Duane Atwood, Sherel Goodrich, and Larry C. Higgens. In Great Basin Naturalist Memoirs. Brigham Young University, Provo, UT. 5th edition in 2015.
<u>Canotia: Flora of Arizona (on-line pdfs)</u>	Arizona	Technical documents with dichotomous keys and descriptions of all plants in selected families of Arizona (entire flora is not finished yet). Includes range maps and some illustrations or photos.	Les Landrum, editor, Arizona State University.
<i>Colorado Flora Western Slope: A Field Guide to the Vascular Plants</i>	Western Colorado	Technical botany book with dichotomous keys and descriptions for all species of Western Colorado; with additional amusing commentary.	William A. Weber and Ronald C. Wittmann. University Press of Colorado, Boulder, CO. 2012.
<i>Flora Neomexicana III: An Illustrated Identification Manual</i>	New Mexico	Technical botany book with dichotomous keys and descriptions for 3,783 vascular plant species of New Mexico.	Kelly Allred (printed on demand through Amazon) 2012.
<u>Flora of Colorado</u>	Colorado	Technical botany book with dichotomous keys and descriptions of all plants of Colorado; includes color photographs for nearly 1/3 of the species.	Jennifer Ackerfield. Botanical Research Institute of TX, 2015.
<u>Flora of the Four Corners Region: Vascular Plants of the San Juan River Drainage, Arizona, Colorado, New Mexico, and Utah</u>	Four Corners area (San Juan River Watershed)	Technical botany book with dichotomous keys and descriptions of 2,117 plant species of the Four Corners region.	Kenneth D. Heil, Steve L. O'Kane Jr., Linda Mary Reeves, and Arnold Clifford. Missouri Botanical Garden Press, St Louis, MO, 2013.
<i>Intermountain Flora</i>	Intermountain West	Technical botany books with dichotomous keys and descriptions of all plants of the Intermountain Region.	Multiple volumes, with multiple authors, including by Arthur Cronquist, Noel H. Holmgren, Patricia K. Holmgren, J.L. Reveal among others, published by New York Botanical Garden over a period of many years.
<i>Uinta Flora</i>	Uinta Basin and Uinta Mountains	Technical botany book with dichotomous keys and descriptions of about 1,700 species of the Uinta Mountains and Basin.	Sherel Goodrich and Allen Huber. U.S. Forest Service Intermountain Region, Ogden, Utah, 2014.

DEFINITIONS (for budding botanists)

Dichotomous key – A series of choices between alternative plant characters that lead to identification of the species. Here is an example (for the genus *Lathyrus* from *A Utah Flora*):

Leaflets 2; stem winged; plants introduced, annual or perennial.

or

Leaflets 4 or more; stems angled but not winged; plants indigenous, perennial.

Endemic – “Restricted in distribution to a particular geographic region” (Walters and Keil 1996).

Flora – A very detailed botanical publication that lists “The plants growing in a region;... with descriptions and keys for identification” (Walters and Keil 1996).

Forb – Herbaceous flowering plant that is not a graminoid. Forbs are what we generally think of as wildflowers, with their colorful flowers.

Graminoid – Herbaceous plant with a grass-like form, meaning elongated stems with long, blade-like leaves. Common graminoids are grasses, rushes and sedges.

Herbaceous – “A plant with little or no above-ground perennial woody tissue, usually dying or dying back to the ground level at the end of the growing season; some herbs...have subterranean woody rhizomes” (Walters and Keil 1996).

Introduced plant – A plant that is not native to an area, meaning it does not grow there naturally. Introduced (or non-native) plants were brought from somewhere else, such as plants brought (intentionally or accidentally) from Europe to North America.

Native plant – A plant that naturally occurs in an area; it was not introduced from somewhere else.

Noxious plant – Noxious is typically a legal or formal designation by an entity (such as a state) to promote efforts to eradicate or control an undesirable plant (weed) that aggressively colonizes areas and often displaces native plants or desired plants (such as crops). A noxious plant is usually an introduced plant.

Phenology – The timing of plant growth and flowering.

Shrub – “A low woody plant with one to many relatively slender trunks” (Walters and Keil 1996).

Taxonomy – The science of naming, describing and classifying plants.

Tree – “A woody plant with one to few relatively massive trunks and a more or less elevated crown” (Walters and Keil 1996).

Weed – An undesirable plant. It is usually an introduced plant, but not necessarily. Farmers sometimes think of some native plants as weeds because they compete with their crops.

Woody plant – Plants with above-ground woody stems that live for many years, in contrast to herbaceous plants whose above-ground stems die each year. Shrubs, trees and vines are the common woody plants.

REFERENCES AND RESOURCES

Harris, James G. and Melinda Woolf Harris. 2001 (2nd edition). *Plant Identification Terminology: An Illustrated Glossary*. Spring Lake Publishing. Spring Lake, Utah.

Walters, Dirk R. and David J. Keil. 1996. *Vascular Plant Taxonomy*. Kendall/Hunt Publishing Company, Dubuque, Iowa.