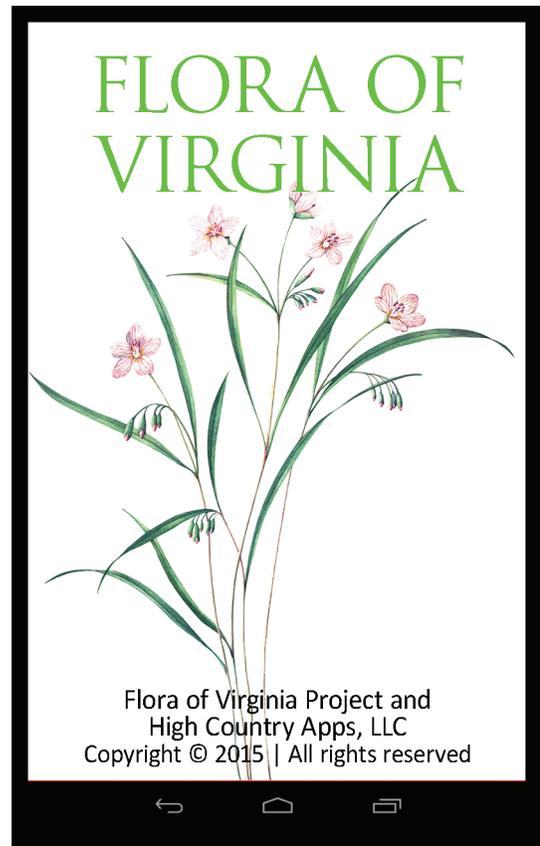


POSSIBLE SCREENS OF THE FLORA APP
AND COVERAGE BY THE FLORA OF OTHER
REGIONS EAST OF THE MISSISSIPPI RIVER

SPLASH SCREEN

When the user runs the Flora App, a splash screen like this illustration will appear and remain on the screen for several seconds. It is like a title page, also listing the Flora Project and developer, with copyright information.

A second splash screen will follow acknowledging leadership grantors supporting creation of the App.



NAVIGATION SCREEN

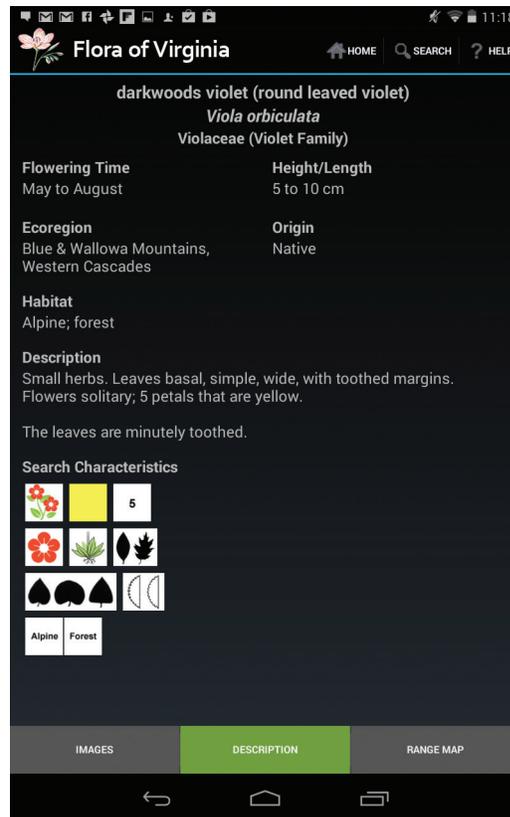
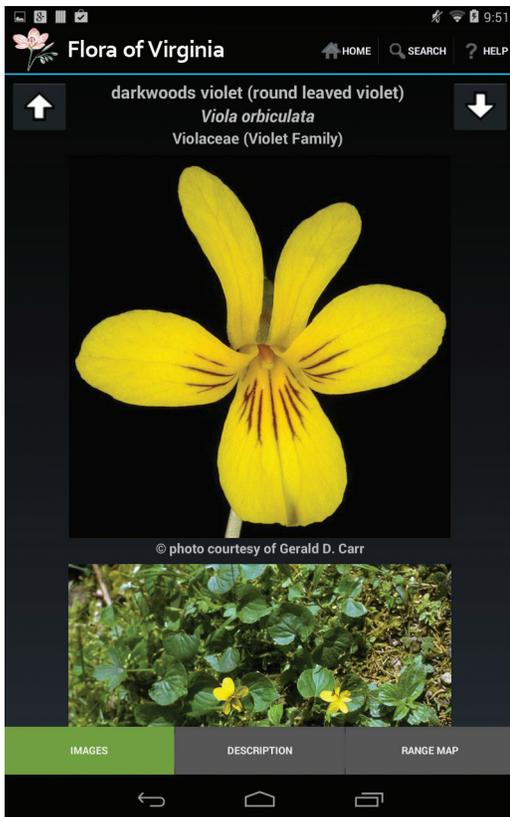
The user's choices lead to a plant-browsing section; a graphic and streamlined identification key; traditional dichotomous keys; and helpful diagrams and other information, including the Flora's extensive glossary.



BROWSING

The Flora App will allow browsing of plants that are presented in a list as shown here, based on the user's choices. Tapping a species entry leads to a screen with description, photographs, illustration, and distribution map. (This and other sample screens were taken from an app made for an area in the West and so may contain plants not found in Virginia.)





SPECIES SCREEN

The species screen will give a close-up of the plant (often of the flower), and another photograph will show the plant's habit. An illustration and a map will be included, as well as its description and a representation of the graphic choices (referring to the simplified automated key) that apply to it.

- | | | |
|---|---|---|
| 1 | Leaves deeply palmately lobed; plants 1–2(–4) m tall; petals white..... | <i>S. hermaphrodita</i> |
| 1 | Leaves unlobed; plants 0.2–1 m tall; petals various shades of yellow. | |
| 2 | Mericarps, styles, and stigmas 5; stem with a spine subtending each leaf; leaves usually truncate to subcordate at the base..... | <i>S. spinosa</i> |
| 2 | Mericarps, styles, and stigmas (6–)10(–14); stem lacking spines subtending the leaves; leaves usually cuneate to rounded (cordate to subcordate in <i>S. cordata</i>) at the base. | |
| 3 | Leaves narrowly elliptic to linear, (3–)4–20 × as long as wide..... | <i>S. elliottii</i> var. <i>elliottii</i> |
| 3 | Leaves elliptic-rhombic, mostly 2–3 × as long as wide | <i>S. rhombifolia</i> var. <i>rhombifolia</i> |

TRADITIONAL KEYING

Traditional dichotomous keys (as the one above to Virginia species of the genus *Sida*) will be part of the Flora App, adapted from the print Flora and presented such that only one couplet at a time will be clearly visible, making its use easier and less intimidating. But a simpler approach, with a graphic interface (see next page), will also be included.

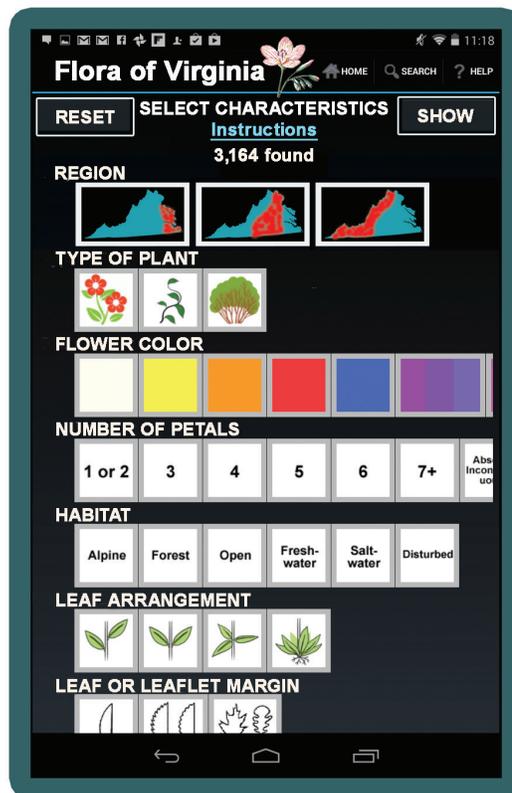
GRAPHIC KEY

The simplified key can be approached in any order. For the plant being identified, the user taps the appropriate icon for each trait, and all species that do not share that character state drop out of the pool of candidates. So the number of species that match the choices (see top, center, e.g., “947 found”) decreases as more choices are made.

USING THE GRAPHIC KEY

(This is a very bare-bones approach to using the graphic key and is meant simply to illustrate how it works.)

Let’s assume you have a plant you want to identify. First, you would run the Flora App, then tap the selection GRAPHIC KEY to begin.



You would see on the first screen of the graphic key a choice of major categories of characters, such as REGION. If you’re looking at a plant on the Coastal Plain, click the proper icon, and the number found (counter at top) will drop sharply, eliminating Piedmont and mountain plants.

Next let’s go to TYPE OF PLANT. If your plant is a wildflower, you’ll tap the icon that shows a wildflower. Instantly, all ferns, trees, grasses, aquatics, and any other nonwildflowers drop out of the running. The number in the counter drops further.

You decide what category to go to next on the screen; the order is not important. Let’s say you pick FLOWER COLOR. Your plant has orange flowers, so you tap ORANGE, and all the plants with red, blue, yellow, or purple flowers are dropped from consideration. The number of remaining possibilities on the counter drops drastically.

Keep going. Say you pick NUMBER OF PETALS. That’s usually easy to determine, so tap the right number and see the number of possibilities drop again.

Ideally, you’ll winnow the field down to one species. If not, you won’t have a lot of contenders, and you can click the button at top right, SHOW, and you’ll get a screen that lets you browse those few possibilities, and the photograph or illustration should give the answer. The dichotomous keys are also available to help you fine-tune. But with the many, many characters you will have to choose from (including blooming time, fruit type, leaf margin, leaf shape, and many more) you ought to get there.

DATA AVAILABLE, BY DATABASE

Here is an idea of the types of information available in each of the seven databases that will be used in the Flora App.

FLORA OF VIRGINIA

| | | | |
|---|-----------------------|-------------------------|--------------------------------------|
| main group (e.g., dicots, monocots, gymnosperms, ferns) | family information | genus description | species description |
| family scientific name | family description | genus references | species phenology |
| family scientific name, alternate | family references | nonnative (Y/N) | species habitat |
| family author | genus scientific name | species scientific name | species status |
| family common names | genus author | species author | species comments |
| | genus common names | species common names | species illustration, when available |
| | genus information | synonymy | |

DIGITAL ATLAS OF THE VIRGINIA FLORA

vaplantatlas.org

| | | | |
|--|--|-------------------------------------|---------------------------|
| <i>Flora</i> species name | by county | species scientific name with author | habitat |
| species scientific name with author | can toggle county name labels | species common name | native or nonnative |
| Virginia county map showing occurrence | listed details: family scientific name | Atlas III scientific name comments | images (work in progress) |

NATURAL HERITAGE VEGETATION PLOTS DATABASE

| | | | |
|---|--|---------------------------------|--|
| ENVIRONMENTAL DATA | surface substrate (% of surface covered by bedrock; boulders and stones; gravel and cobbles; litter/organic matter; decaying wood; water; mineral soil/sand; bryophytes/lichens; or other) | pH | Cu (ppm) |
| slope (%) | | organic matter (%) | Zn (ppm) |
| slope aspect (direction) | | estimated N release (lb N/acre) | Al (ppm) |
| landform (e.g., cove; bedrock outcrop; dune; ravine; tidal flat) | | soluble S (ppm) | sand (%) |
| soil drainage class (degree of draining or of inundation) | | P (ppm) | silt (%) |
| soil moisture regime (nine classes, from very xeric to hydric) | | Ca (ppm) | clay (%) |
| hydrologic regime (degree of flooding, if any [tidal or nontidal], and salinity/halinity) | SOIL-CHEMISTRY PARAMETERS | Mg (ppm) | COMPOSITIONAL DATA |
| | cation exchange capacity | Ca:Mg ratio | All vascular plant species recorded in a sample plot, with an estimate of abundance in the sample. |
| | base saturation | K (ppm) | |
| | fertility index | Na (ppm) | |
| | | B (ppm) | |
| | | Fe (ppm) | |
| | | Mn (ppm) | |

NATURAL HERITAGE RARE PLANT DATABASE

www.dcr.virginia.gov/natural_heritage/documents/plantlist14.pdf

global rank (e.g., rangewide ranks G1 [critically imperiled] through G5 [secure])

state rank (e.g., Virginia ranks S1 [critically imperiled] through S5 [secure])

federal status (taxa listed as federally threatened or endangered)

state status (taxa listed in Virginia as threatened or endangered)

NATURAL HERITAGE INVASIVE PLANT DATABASE

www.dcr.virginia.gov/natural_heritage/invspinfo.shtml

Virginia invasiveness rank

NatureServe invasiveness rank

ranks for Alexandria and for adjacent states

NATIONAL WETLAND PLANT LIST

rsgisias.crrel.usace.army.mil/NWPL/#

C-VALUE LIST FOR VIRGINIA

Conservation value

