

Guide to Phenological Scoring Tools in the CCH2 Portal

last updated by Katie Pearson on 5 March 2019

Goal: This guide describes the general use of three tools in CCH2 that enable scoring of phenological traits from specimen images. Taxon-specific protocols will be developed and published separately.

I. Scoring phenology from images (using trait coding tool)

This is the most efficient method of scoring phenology from images. To access and use this tool:

1. Log in to your account in CCH2 (cch2.org).



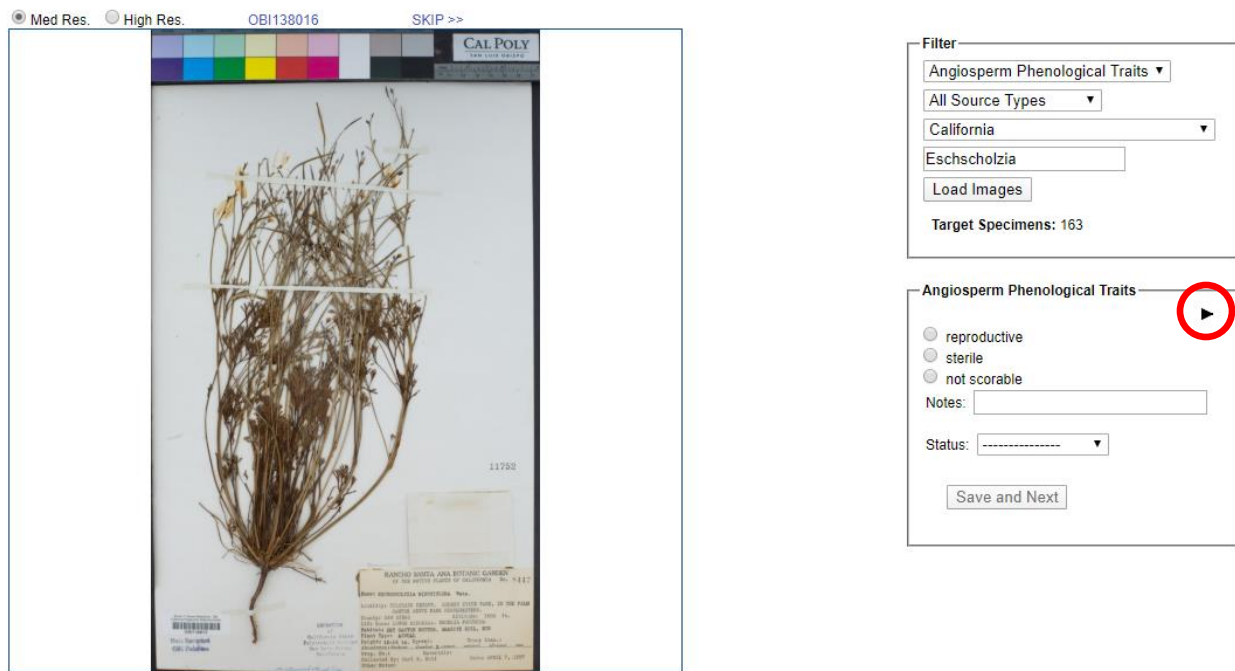
2. Click My Profile.
3. Click the Specimen Management tab.
4. Click the name of the collection for which you will score specimens for phenology (there will likely only be one).
5. In the Data Editor Control Panel, click Occurrence Trait Coding Tools.
6. Select "Trait Coding from Images" from the two provided options.
7. In the Filter box, select Angiosperm Phenological Traits from the Trait dropdown menu.

Filter

Select Trait (required) ▼
All Source Types ▼
All Counties & All States ▼
All Taxa
Load Images

8. Type the name of the taxon for which you wish to score phenological traits in the All Taxa box. A dropdown list will appear, and you should select the appropriate taxon from that list. You can also refine your search by using the All Source Types and All Counties & All States dropdown lists (see descriptions below).

- **All Source Types:** this field allows you to view and re-score specimens that have already been scored using another method (e.g., text mining). Leave this as is unless you are specifically working on re-annotating specimens.
 - **All Countries & All States:** this field provides a dropdown menu of all countries and U.S. states that are indexed in CCH2. If you select one of these geographic criteria, the tool will only show you specimens from that country/state.
9. Click the Load Images button. On the next page, you will see an image of a specimen of the selected taxon on the left, and an Action Panel on the right (see screenshot on next page). Note that you can edit the contents of the Filter box as well.



10. If you wish to score the specimen with more detail than just “reproductive” or “sterile”, click the black triangle inside the Action Panel to show the finer-scale phenological scoring options (circled above).
11. From this list, select which reproductive structures are present or absent on the specimen. If you are not sure about the presence or absence of a structure, leave the radio buttons for that structure unfilled.
- If the image cannot be scored (e.g., the majority of plant is obscured or damaged), select “not scorable.”
 - If you are unsure about your scoring, write a note about your uncertainty in the Notes field and change the Status to Expert Needed. Click Save and Next. Alternatively, you can skip the image by clicking SKIP >> at the top right of the image.
12. Once you are satisfied with your scoring, click Save and Next.

II. Scoring phenology from images (using occurrence editor)

You can also score the phenology of a specimen from that specimen's occurrence editor page by clicking the Traits tab (circled below).

OBI - Robert F. Hoover Herbarium, Cal Poly State University (OBI)
 Home >> Collection Management >> Public Display >> Editor | 360 of 76031

Occurrence Data | Determination History | Image | **Traits** | Linked Resources | Admin

Collector Info
 Catalog Number ? Other Cat. #s ? Collector ? Number ? Date ? Dupes?
 OBI134717 3620 Mary Kidd 155 1971-08-01 Auto search

Associated Collectors ? Verbatim Date ?
 1-Aug-71

Latest Identification
 Scientific Name ? Author ?
 Acer negundo L.

ID Qualifier ? Family ? Sapindaceae
 Identified By ? Date Identified ?

Locality
 Country ? State/Province ? County ? Municipality ? Location ID ?
 United States California San Luis Obispo

Locality ?
 On 3 Acre Law, W of clock tower, campus of Calif State Polytechnic college

Security: Security not applied Deactivate Locality Lookup
 Latitude Longitude Uncertainty ? Datum ? Verbatim Coordinates ?
 35.29988 -120.66557 113 WGS84

Elevation in Meters ? Verbatim Elevation ? Depth in Meters ? Verbatim Depth ?

Georeferenced By Georeference Sources ? Georeference Remarks

Label Processing
 Zoom? Med Res High Res

OCR Image Options
 OCR whole image
 OCR w/ analysis

Image 1 of 1

If you wish to score the specimen with more detail than just “reproductive” or “sterile”, click the black triangle inside the Action Panel to show the finer-scale phenological scoring options.

From this list, select which reproductive structures are present or absent on the specimen. If you are not sure about the presence or absence of a structure, leave the radio buttons for that structure unfilled.

- If the image cannot be scored (e.g., the majority of plant is obscured or damaged), select “not scorable.”
- If you are unsure about your scoring, write a note about your uncertainty in the Notes field and change the Status to Expert Needed.
- If you need to redo your scoring, press the Delete Coding button.

Click the Save Edits button when you are satisfied with your scoring.

III. Scoring phenology from text fields

It is also possible to score the phenology of batches of specimens that have a particular string of text in a certain database field. For example, all specimens with a value of “flowering” in the reproductive condition field could be mapped to “flowers present.” To access and use this tool:

1. Navigate to Data Editor Control Panel (see Section I).
2. Click Occurrence Trait Coding Tools and select “Trait Mining from Verbatim Text”.
3. For the “Occurrence trait” field in the resulting Harvesting Filter box, select Angiosperm Phenological Traits from the dropdown menu.

4. For the “Verbatim text source” field, select the database field that you want the tool to display. The options include: Habitat, Substrate, Occurrence Remarks (Notes), Dynamic Properties, Verbatim Attributes (Description), Behavior, Reproductive Condition (Phenology), Life Stage, and Sex.
5. In the “Filter by text (optional)” field, you can enter any text string by which you wish to filter the results. For example, if you enter “fw”, the tool will provide all values for that field that contain “fw”. This field is optional, but including a search string will significantly narrow your search results.
 - When choosing strings to enter in this field, consider searching for misspelled and abbreviated versions of the values you expect. For example, you could search for “fowering” or “fwrr” as well as “flowering” and “fwr”.
6. In the “Filter by taxon (optional)” field, you can enter the name of a taxon by which you wish to filter the results. This field is also optional.
7. Once you have filled out the desired fields, click the Get Field Values button. The result will look similar to the screenshot on the next page. The Harvesting Filter box is still visible, and the box below will list all the unique strings (values) found in the specified database field that align with your search criteria. The numbers in brackets to the right of each string value indicates how many specimen records have that exact value in the specified database field.

Harvesting Filter

Occurrence trait: ▾

Verbatim text source: ▾

Filter by text (optional):

Filter by taxon (optional):

Reproductive Condition

Select Source Field Value(s) - hold down control or shift buttons to select more than one value

flowering - [121]

flowering/fruiting - [6]

flowering/fruiting - [55]

none flowering - [2]

none yet flowering - [1]

past flowering - [1]

reproductive ▶
 sterile
 not scorable

Notes:

Status: ▾

8. To score the phenology of specimens with these values in the specified database field, select the value or values that you wish to score from the list.
 - To select several values from the list that you wish to give the same phenological score, hold Ctrl and click on each value in the list.
9. Select the appropriate score from the phenological traits list at the bottom of the lower box. If you wish to score the specimens with more detail than just “reproductive” or “sterile”, click the black triangle inside the Action Panel to show the finer-scale phenological scoring options. From this list, select which reproductive structures are present or absent on the specimen. If you are not sure about the presence or absence of a structure, leave the radio buttons for that structure unfilled.
 - If the image cannot be scored (e.g., the majority of plant is obscured or damaged), select “not scorable.”
 - If you are unsure about your scoring, write a note about your uncertainty in the Notes field and change the Status to Expert Needed.
 - If you need to redo your scoring, press the Reset Form button
10. When you are satisfied with your scoring(s), click the Batch Assign State(s) button.