



The following guidelines apply to the Phenophase Photo Guides that Local Phenology Programs may create as supplemental training materials for making observations in *Nature's Notebook*.



1. Images and text boxes on page one, the front page, can be resized as needed to make everything fit. The easiest way to replace the images is to right click on the image, select "Change picture..." and choose the file you wish to add. Then use the "Format Picture" tools to resize or crop if necessary. All images should have a black 1pt solid line border.
2. Red font on the document indicates placeholder text that should be revised as appropriate. Once edits are completed to match the chosen species, the color of the font should be changed to black font.
 - a. The section titled "Why observe?" on page one, depends on the goals of the Local Phenology Program or *Nature's Notebook* Campaign that includes this species.
 - b. The section titled "Tips for identification" on page one, depends on general or local characteristics of species.
 - c. For the fruit phenophase definitions on page two, copy text verbatim from fruit definitions on the *Nature's Notebook* profile page for the species (the protocol). Again, be sure to replace the text in red, "For XYZ species the fruits..." with the fruit definitions in the species profile and then change the font to black when complete.
 - d. For any phenophase listed in red after "Phenophases not pictured:" check *Nature's Notebook* to see if this phenophase is assigned to the species--if not delete it, if so change the font to black.
3. To add phenophase images on page two use the tip above--right click on the placeholder image, select "Change picture..." and choose the file you wish to add. Then use the "Format Picture" tools to resize or crop if necessary. We recommend phenophase images be a minimum of 1.57" x 1.57" however they can be larger if there is space available on the page. All images should have a black 1pt solid line border.
4. **Phenophase photos should unambiguously illustrate the phenophase.** In other words, the photo should clearly show or demonstrate the text contained in the phenophase definition. It should be as taken as close up as possible, in focus, and not too sun-dappled or over- or underexposed to clearly illustrate the phenophase. Moderately overcast days are the best days to take phenophase photos! If you do not have an adequate photo for a phenophase, it is best to leave the "Image Needed" placeholder until a suitable photo is obtained.

The following are some examples of common problems to avoid (all photos by Ellen G. Denny, [CC BY-NC-SA 4.0](#)).



- **Initial growth:** There should be no unfolded leaves on the plant shoot.

	
<p>✗ This image shows the first leaf but it is arguably unfolded, or at least it is not still clearly folded up.</p>	<p>✓ This image shows the first growth on the strawberry shoot with the first leaf still clearly folded up.</p>



- **Breaking leaf buds:** The leaf tip should be visible, but not yet a leaf petiole.

	
<p>✗ This image shows a swelling leaf bud with green bud scales sliding apart, but no leaf tip is visible yet.</p>	<p>✓ This image clearly shows the green leaf tip between the bud scales but the petiole has not yet emerged.</p>



- **Young leaves:** There should be a clear visible distinction between the mature, larger or darker green leaves, and the young, smaller or lighter green leaves.

	
<p>✗ The bright sun reflection makes it hard to discern the difference between young and mature leaves.</p>	<p>✓ Less sun reflection makes the light green young leaves discernable from dark green mature leaves.</p>



- **Increasing leaf size:** There should not be mature leaves on the plant. This phenophase represents the period of time, usually in spring, after the first flush of leaves appears on the plant and all or most leaves are still growing larger. The growth of new leaves at the end of branches after most leaves are full size, as may happen throughout the summer, **does not count** as “Increasing leaf size”. Photos will need to be taken at the beginning of the growing season to capture this phenophase.

	
<p>✗ This image shows a new leaf at the end of a twig after most of the leaves on the plant are full size.</p>	<p>✓ This image correctly illustrates the phenophase in spring, when all the leaves are still growing larger.</p>



- **Flowers or flower buds:** Unopened flowers or flower buds should be visible in the image. Open flowers may also be visible in the image, but are not essential to include.

	
<p>✗ The few unopened flowers in the image are on the edge and not in focus, so this photo is not ideal.</p>	<p>✓ Unopened flowers are in focus in the center of the image, so this is a better photo for this phenophase.</p>



- **Open flowers:** The reproductive parts should be clearly visible.

	
<p>✗ To see reproductive parts in this image requires zooming in on the digital file, so this photo is not ideal.</p>	<p>✓ The reproductive parts are well-lit and in focus, so this is a better photo for this phenophase.</p>

- **Fruits:** Unripe fruits should be visible in the image. Ripe fruits may also be visible in the image, but are not essential to include. Read the species-specific part of the phenophase definition to learn what a species’ fruits look like and how their appearance will change as they ripen.

	
<p>✗ Only ripe fruits are included in this image of blueberry fruits, so this photo is not ideal.</p>	<p>✓ This image shows blueberry fruits in several unripe stages, so is a better photo for this phenophase.</p>

- **Ripe fruits:** Fruits in the image should be unambiguously ripe. In some species, deciding when a fruit changes from unripe to ripe can be tricky (for example when fruits gradually turn from green to red). The photo in a phenophase guide should illustrate what a fully ripe fruit looks like so observers can use that as a guideline to know what point in the ripening process they are waiting to see before reporting Yes to “Ripe fruits”.

	
<p>✗ This image of winterberry holly arguably has a ripe fruit in the center but most are not yet ripe.</p>	<p>✓ This image clearly shows what fully ripe winterberry holly fruits will look like.</p>

5. If you are collecting images from online sources **be sure they are of the correct species**. Even sites that seem to be authoritative can have misidentified images. If you cannot verify the species from your own familiarity with it, check images at several other sites to be sure your favorite image for a phenophase is consistent with other sources.
6. For images gathered online, verify that you are permitted to redistribute them, and make sure you provide the proper photo credit (attribution) in the photo guide. Include the required information underneath the image, modifying the placeholder text in the template according to the following guidelines:
 - a. Images in the public domain can be used and do not require attribution. However, we recommend they be labeled “Author. Public domain”, or just “Public domain” if the author is unknown or wants to remain anonymous. It is not required, but if you want, you can hyperlink the author’s name to the online source of the image (as described below) as a courtesy to the author and/or anyone that might want to track down a higher resolution of the image for another use.
 - b. Images that are copyrighted with all rights reserved can NOT be used unless you go to the trouble to obtain permission from the author/photographer to use and distribute them on *Nature’s Notebook* phenophase photo guides. If you do get permission, ask the author how they prefer the image is labeled in the photo guide—probably with “© Author. All rights reserved”.
 - c. Images with Creative Commons licenses of CC BY, CC BY-SA, CC BY-NC and CC BY-NC-SA can be used in photo guides. Do NOT use images with either a CC BY-ND or CC BY-NC-ND license as these cannot be cropped or modified in any way. These images should be labeled with:
 - Author
 - Source (in some cases)
 - License
 - Modifications if applicable (e.g. cropped, desaturated)

An example photo credit might read:

Sarah M Bruce via Wikimedia Commons. CC BY-SA 3.0 (cropped)

Additionally, the photo credit text for CC-licensed images should include hyperlinks to:

- the original online source of the image
- the Creative Commons license

To accomplish this, the Author and Source text should be hyperlinked to the image’s documentation page (e.g. the “Sarah M Bruce via Wikimedia Commons.” part in the example above) and the License text to the CC license page (e.g. the “CC BY-SA 3.0” part). The hyperlinked photo credit would look like:

[Sarah M Bruce via Wikimedia Commons. CC BY-SA 3.0](#) (cropped)

If you are using your own image or that of a friend or colleague that is not posted online anywhere except in the photo guide, but for which you'd like to assign a CC license, simply include the author name and the license without hyperlinking the author name to a source. For example:

Patty Guertin. [CC BY-NC-SA 4.0](#)

Hyperlinks should be orange and "Followed Hyperlinks" (color of the link after the user clicks on it) should be purple. These can be set in Powerpoint in "Theme Colors" found under the "Format" menu. For orange use web safe color #FF6600. For purple use web safe color #660066.

Be aware that according to [Creative Commons best practices for attribution](#), the image title should also be included in the photo credit because authors of artistically-composed images will often deliberately title their work. However, the nature shots selected for these photo guides are usually not titled works. Although they might be labeled with a title at some websites, more often than not this text was simply intended as a unique filename or image description, and does not need to be included in the photo credit on the photo guide given our limited space.

- d. The following websites are good sources for plant and animal photos. Although you should generally follow the attribution guidelines listed at the site where the image was found, it is ok to keep the text as short as possible. For each site we include a recommended citation format below to make best use of the limited space on a photo guide document. Notice that these examples include two separate hyperlinks, the first for the image source and the second for the license (as explained above).
- [USA-NPN galleries on SmugMug](#) – these are our own caches of phenophase photos and the proper citation is listed under the title for each image. You can copy and paste it into the guide (you might need to Paste Special or Paste and Match Formatting) and then add the hyperlinks

[Sara N. Schaffer via SmugMug. CC BY-NC-SA 4.0](#)

- [Wikimedia Commons](#) – by choosing "Image" in the "File type" filter in the "Advanced parameters" menu you can limit your search to image files

[Danny S. via Wikimedia Commons. CC BY-SA 3.0](#)

- [Forestry Images](#) / [Insect Images](#) – these are image searches for Bugwood.org

[Robert L. Anderson, USDA Forest Service, Bugwood.org. CC BY 3.0](#)

- [CalPhotos](#) – older images generally require written permission for use but some of the newer images have Creative Commons licenses

[©2015 Zoya Akulova. CC BY-NC 3.0](#)

- [iNaturalist](#) – search seems to default to observation data but to get images, type your species name in the search box and hit return, then clicking on the thumbnail image or species name in the resulting list gets you to a page that has photos

[© Claire O'Neill via iNaturalist.org. CC BY-NC 4.0](#)

- [Creative Commons Search](#) – this page allows you to search for CC-licensed images across other websites, including Flickr. After you type your species name and hit return, use the filter “I want something that I can” and select “Modify or adapt” to avoid the ND-licensed images. Once you find a usable photo, click the “Info” icon and then whatever is linked under “Source” (e.g. Flickr) to get to the original source of the photo. Use the information at this original location for your citation. Note that CC Search automatically picks up a title for the image based on a field for image name which is often a default filename (e.g. DSC_1245) or some basic description (e.g. Maple, red leaves). As explained above, it is not necessary to include this title in the citation.

[joshman29 via Flickr. CC BY 2.0](#)

7. If long definitions cause the text to run over other elements on the page, you can resize the font of the definition (but not the phenophase name) from the standard Calibri 11 down to 10 or 9 or 8. If you need to reduce the font size for one of the definitions, consider making it the same size for all definitions on the page for the sake of esthetic consistency.