General Instructions

Output

COCO 1.0 json file

Classes: carrot, weed_center

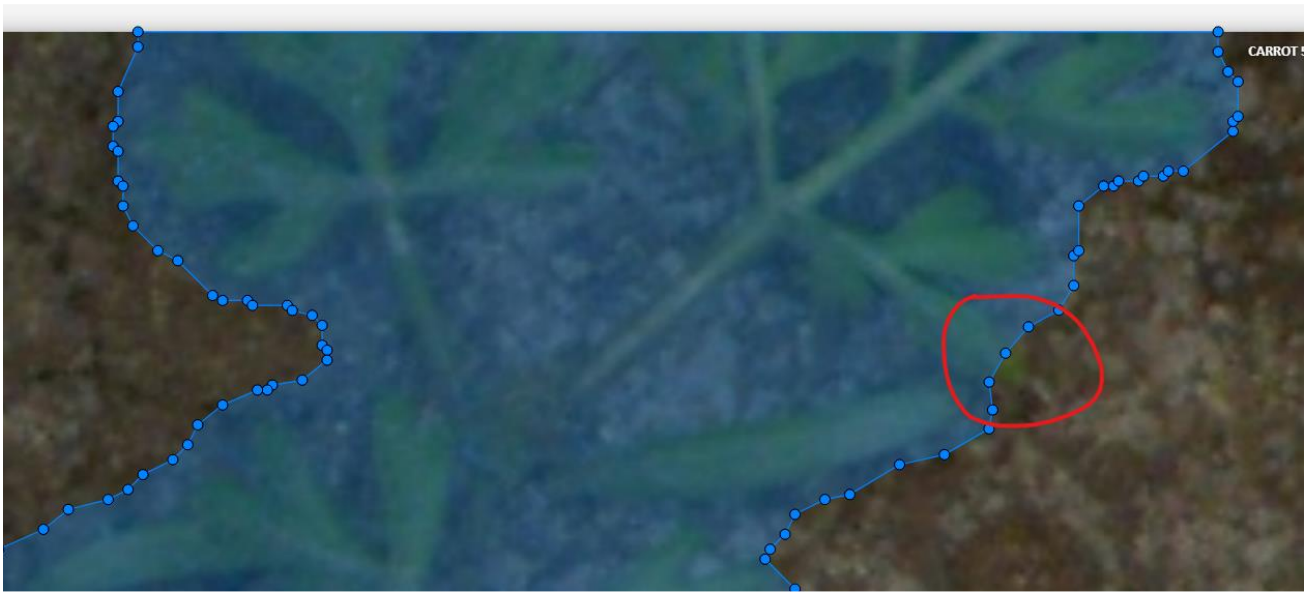
Annotation Types

1. Polygon – for carrots
2. Fixed size 28x28pix polygon circles – for weeds

Rules:

1. Do not create polygons significantly larger than plant. 5pix max soil buffer zone is acceptable.

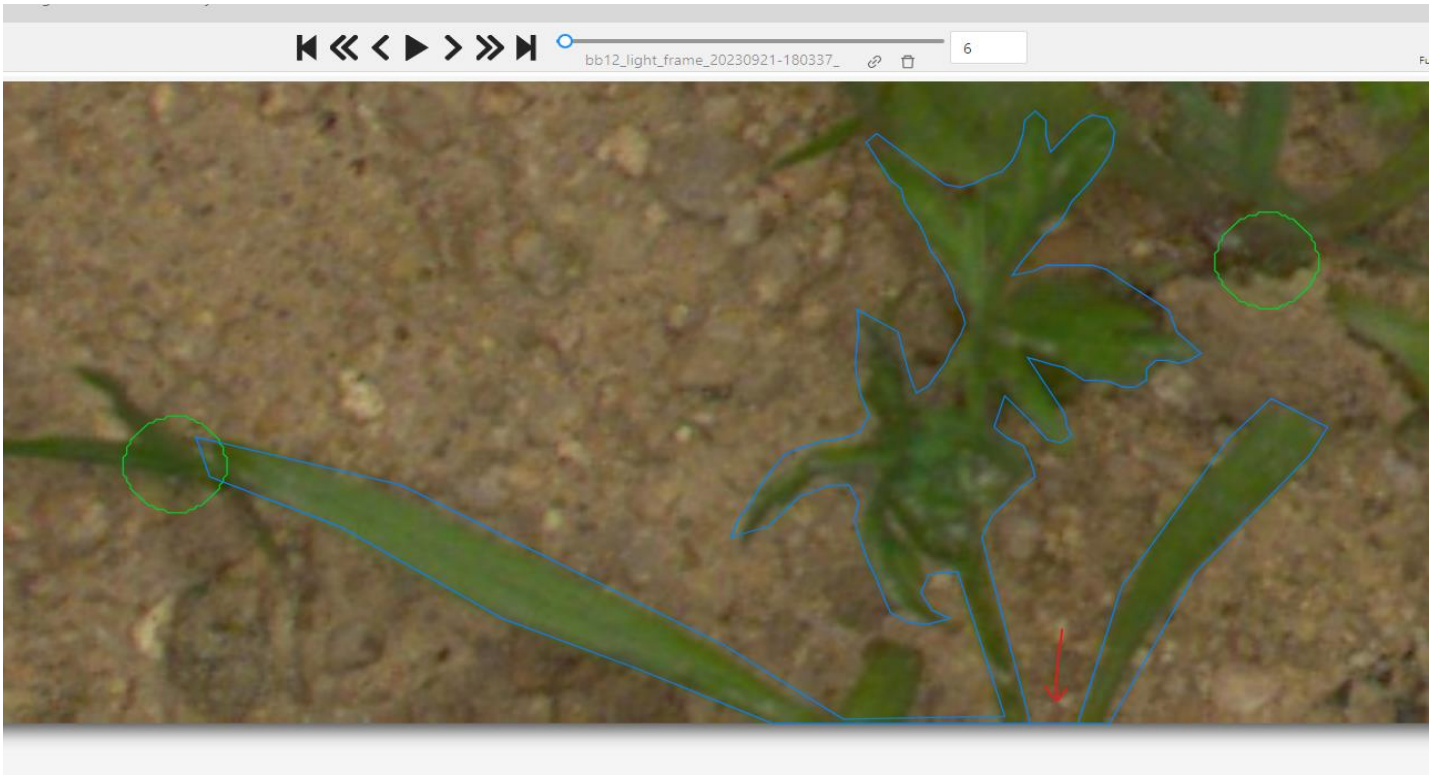
2. Do not leave any part of the plant outside the polygon, even small ones. Annotations must be accurate in terms of including all the parts.



3. If the center of two leaves from one plant is covered with soil, all leaves anyway should be marked in one polygon.

4. Annotate plants even if they are cropped by image edges (if the cropped part is big enough to properly distinguish category).

5. Do not create self-overlapping polygons at the edge of the image frame (use few pixel wide bridge line between parts)

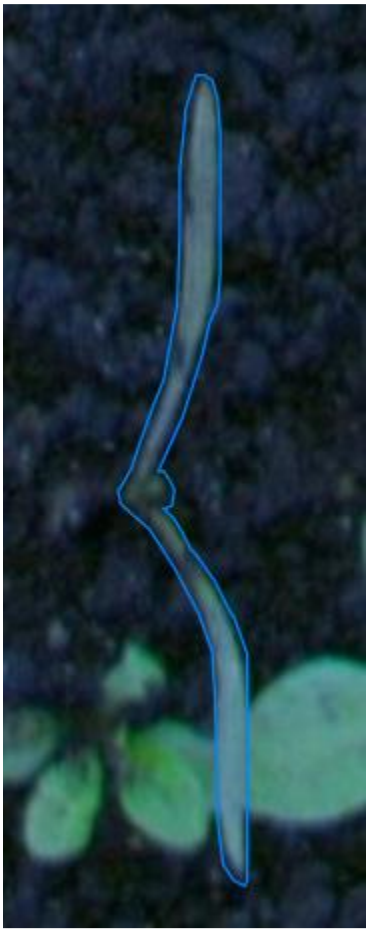


6. If a human can clearly see where plant parts belong then it should be annotated as a single plant. On the left example we can see that some plants' parts overlap, however it is clear to which plant they belong, thus we can distinguish 3 different carrots. On the contrary, on the right-side parts are so close to each other then it is not possible to distinguish whether it is one plant or two smaller ones growing together, in this case we annotate them as a single plant.

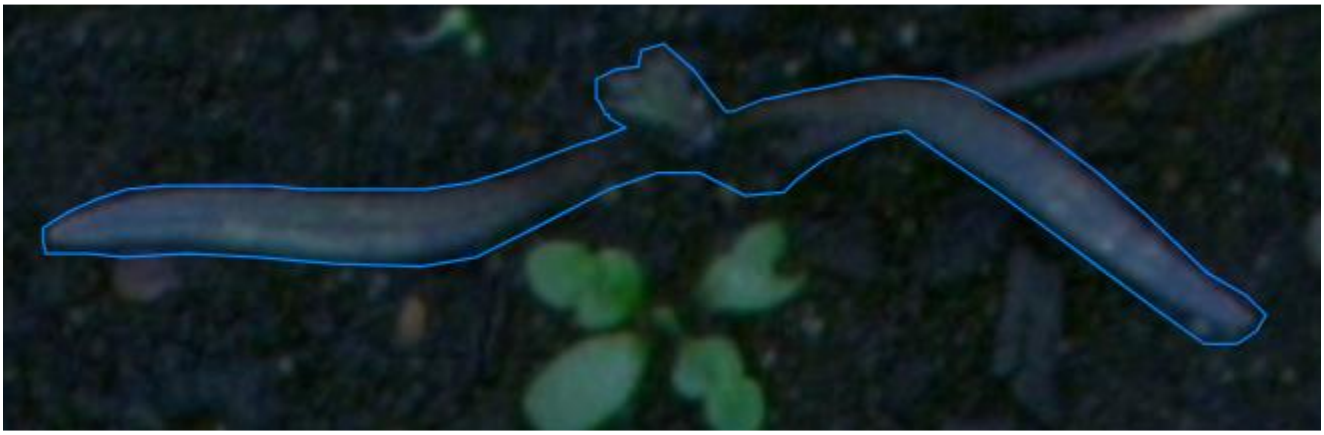
Carrots

1. All seedlings should be annotated as a one class: “carrot”, although they appear in several growth stages and look differently. See examples below.

a) 2 baby leaves

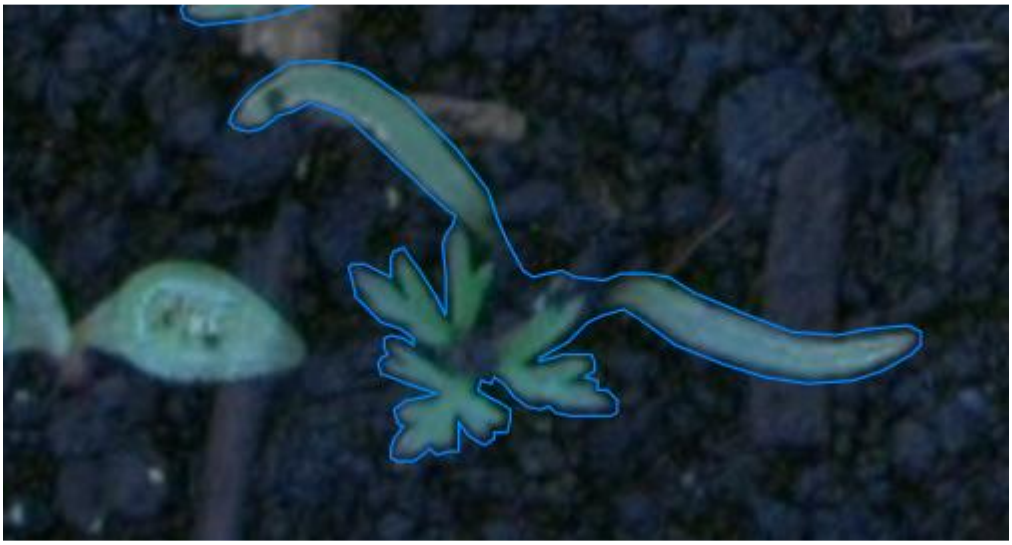


b) 2 baby leaves + 1 emerging leaf



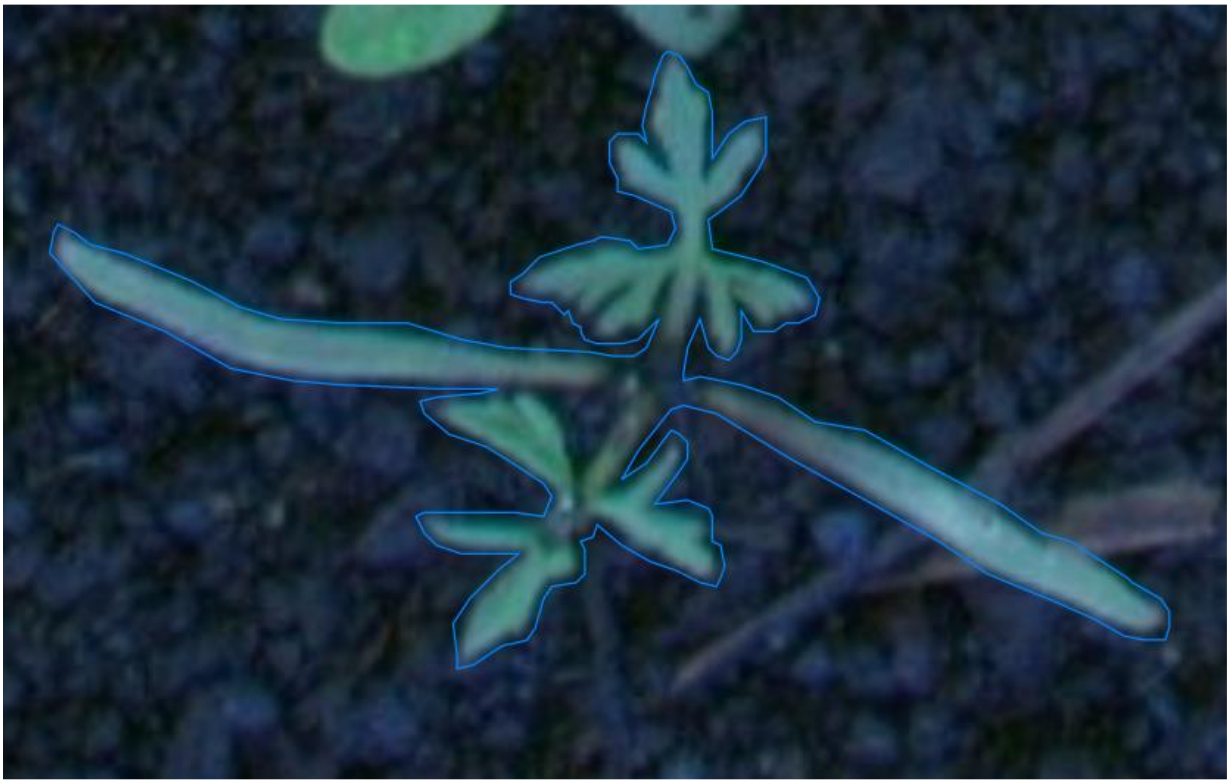
Property of WeedBot

c) 2 baby leaves + 1 real leaf (can be even bigger)



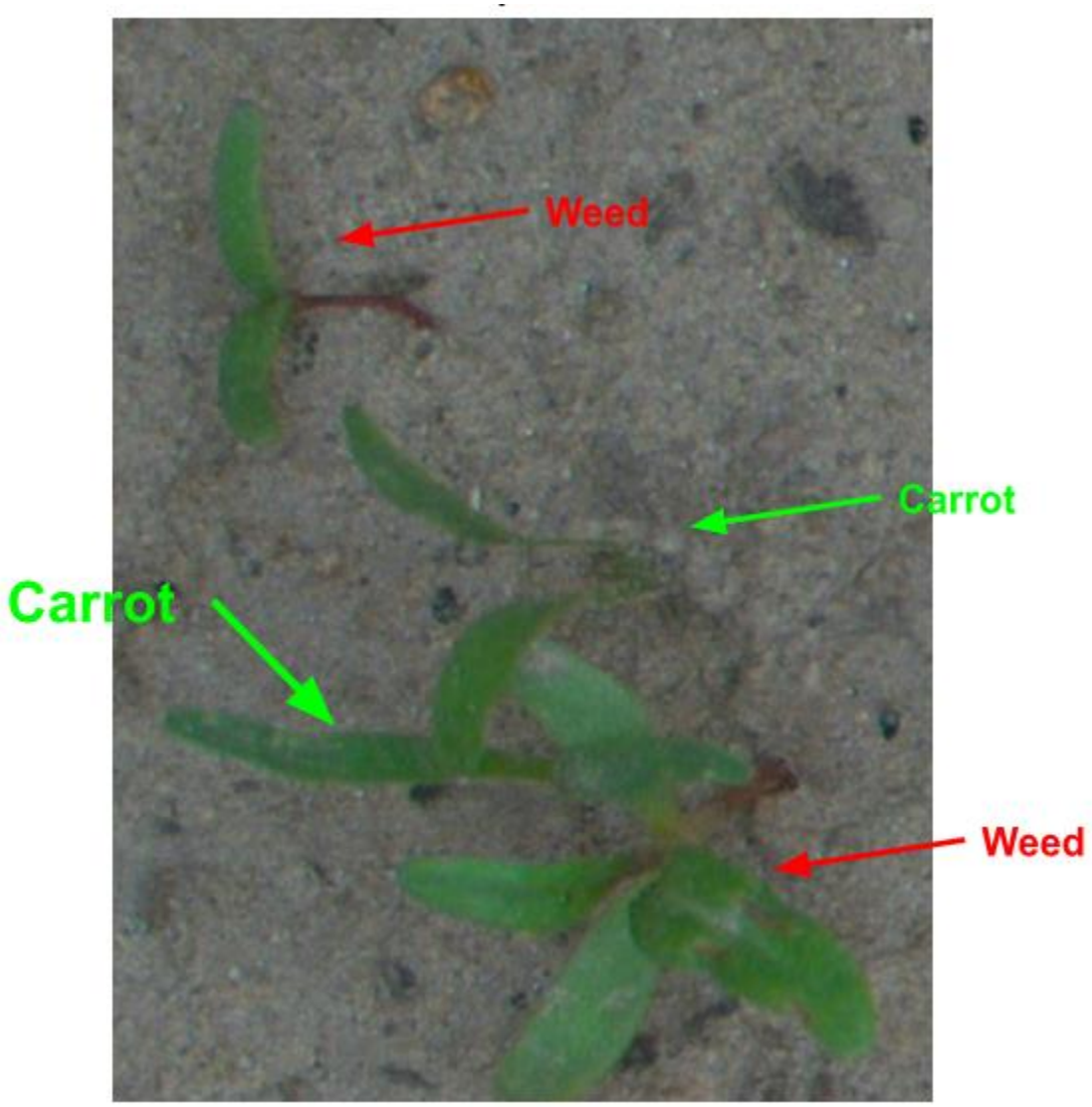
d) 2 baby leaves + 1 real leaf + 1 emerging real leaf

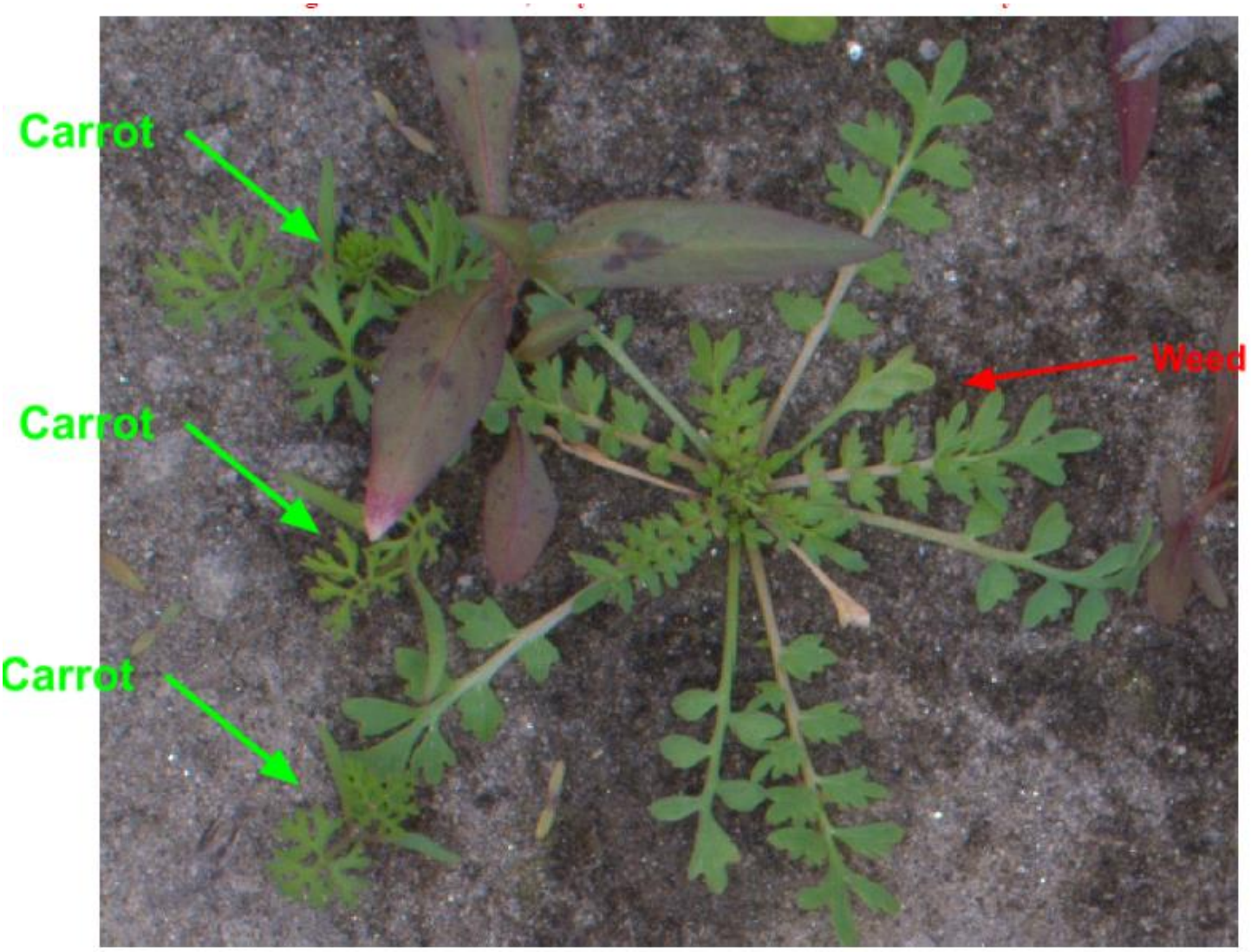
e) 2 baby leaves + 2 real leaves



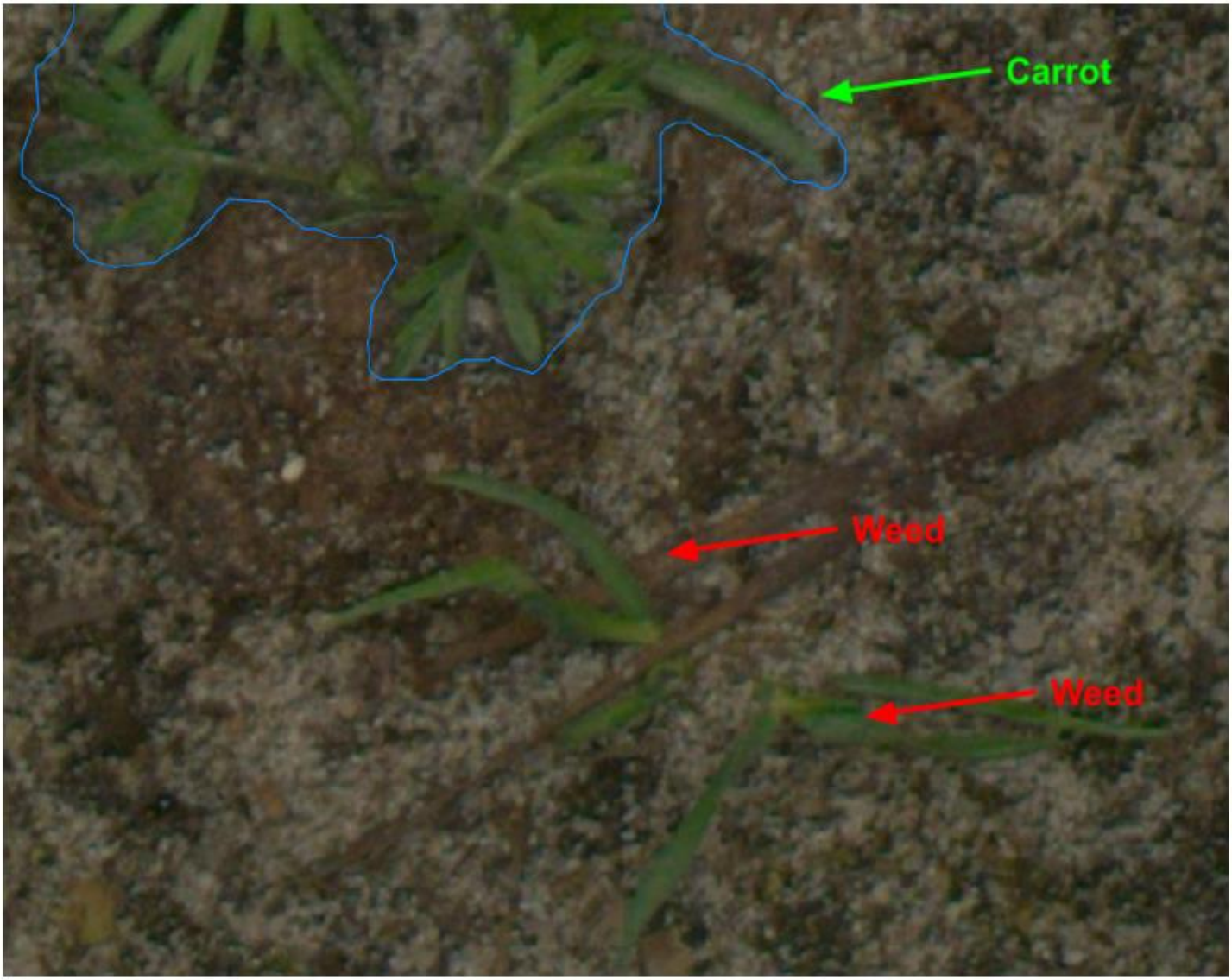
f) 2 baby leaves + more than 2 real leaves

2. There are weeds which are very similar to carrots. This weed in the left top corner has black stem, while a carrot usually has green. In extreme cases when it is completely not clear if it is carrot or weed, it is better to annotate it as carrot, rather than leave it not annotated at all.





Property of WeedBot



Property of WeedBot

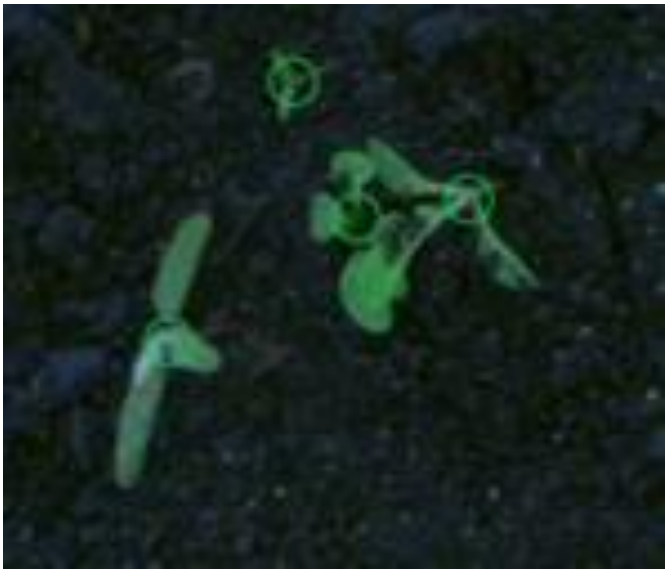
3. Sometimes carrots can have purple leaves – that is due to the cold weather conditions. Annotate them as normal carrots.

Weeds

1. Weeds may be in a different color like green, red, purple etc.

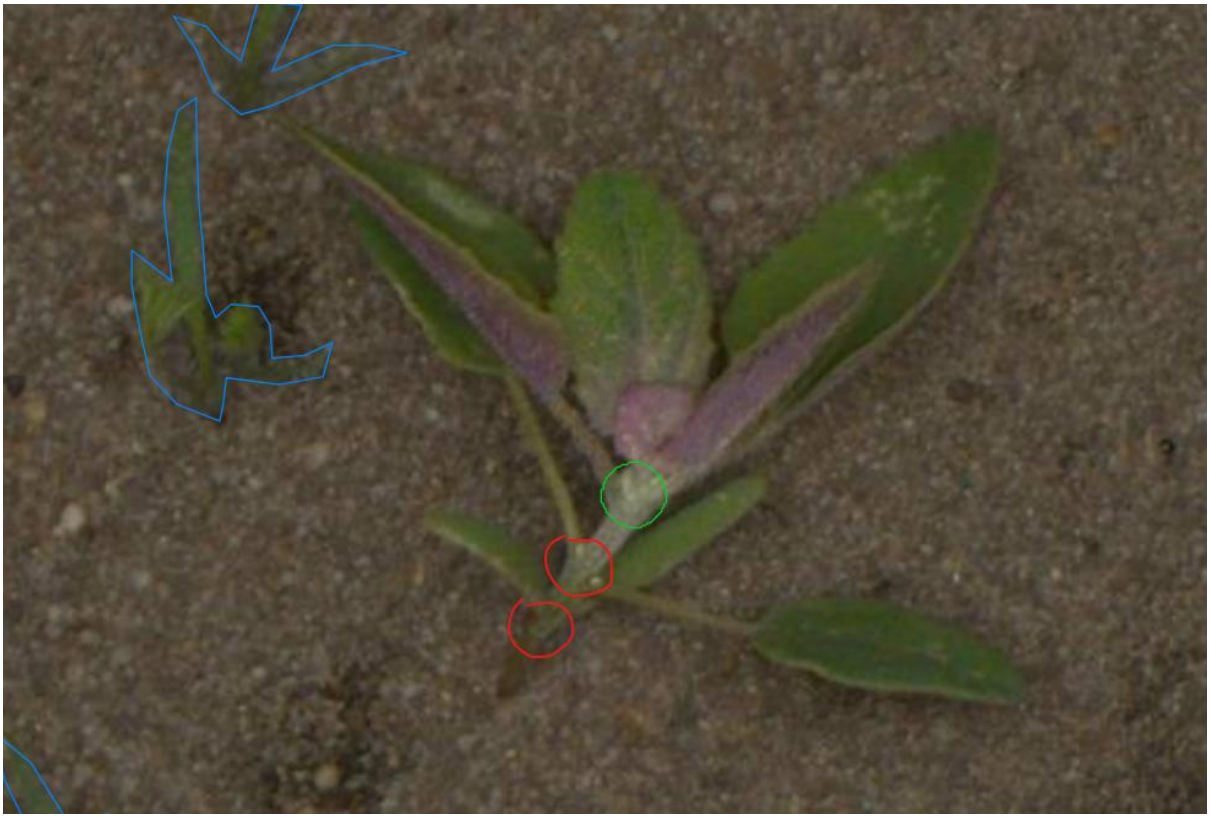
2. Annotate all weeds except dead/dried out weeds.

3. For small weeds place single circle in the center of the main steam where leaves are growing apart.

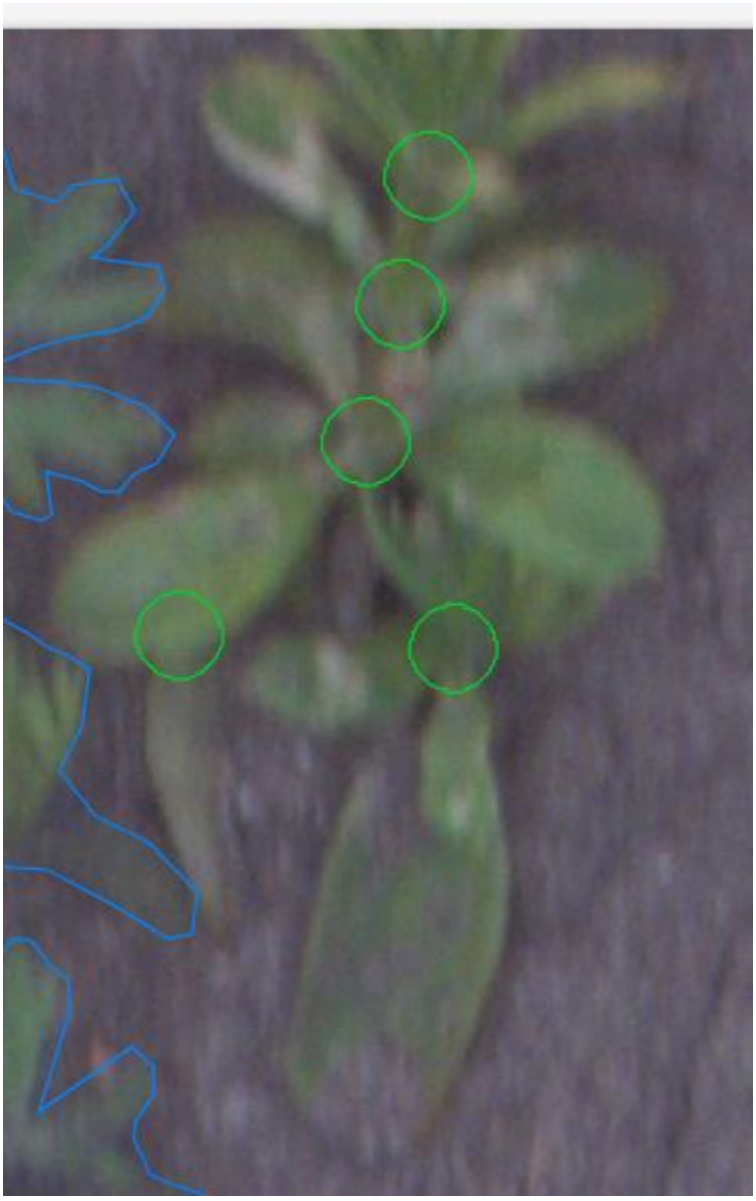


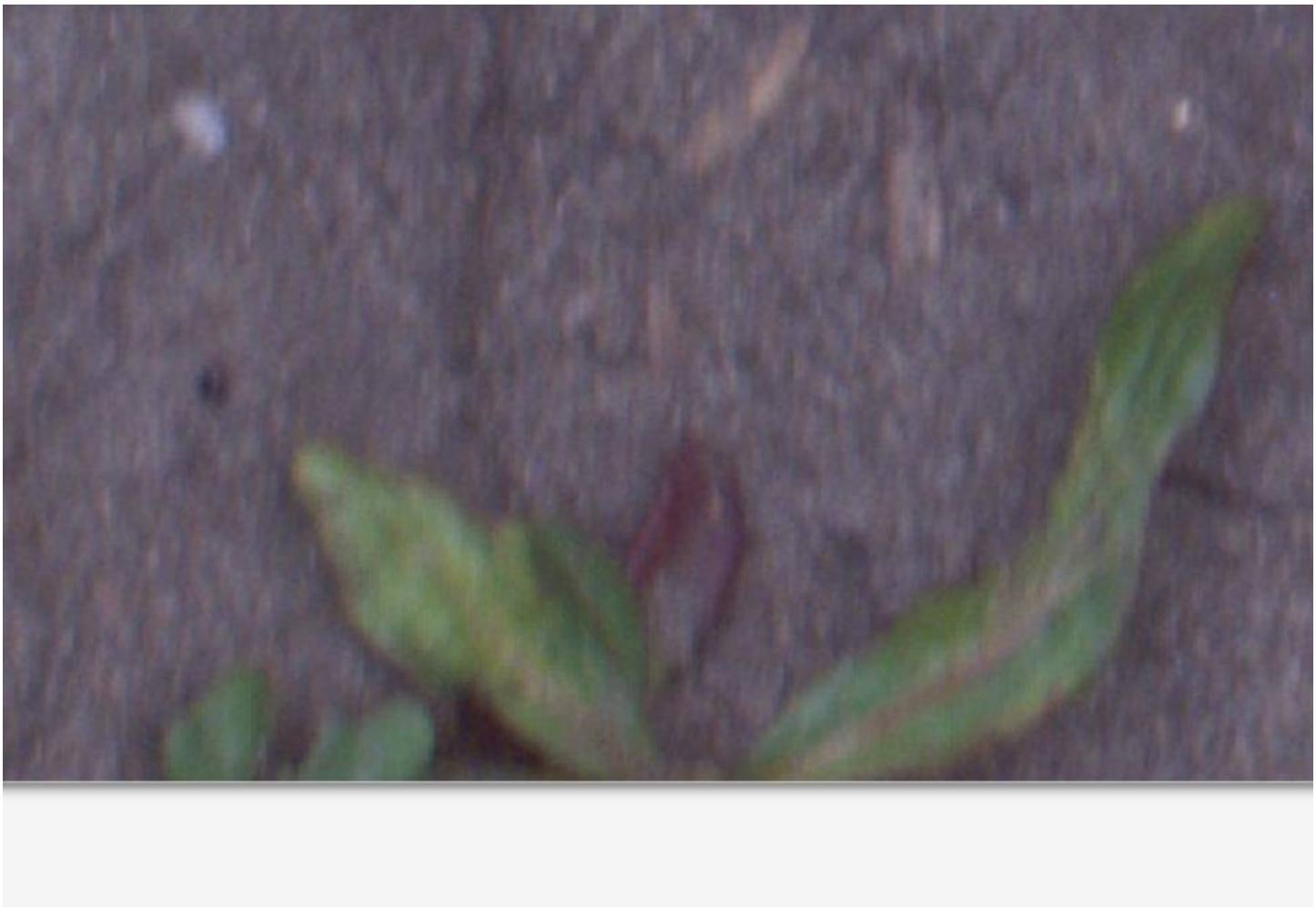
4. In this case weed leaves are relatively small and they do not look like growing as individual leaves on single stem, thus no need to label each connection point. However, when leaves are bigger and more apart, then they should be labelled as it is done in this example.

5. Weeds captured in perspective should be labelled with multiple circles if there are multiple leaves growing from the different place on the main stem.



6. Some times there are extra big weeds. Place circles for every leaf or bunch of leaves growing from different location on the main steam.



Property of WeedBot

7. Do not annotate weeds, when growing center is not visible (outside the image frame)