Orange Hawkweed mask

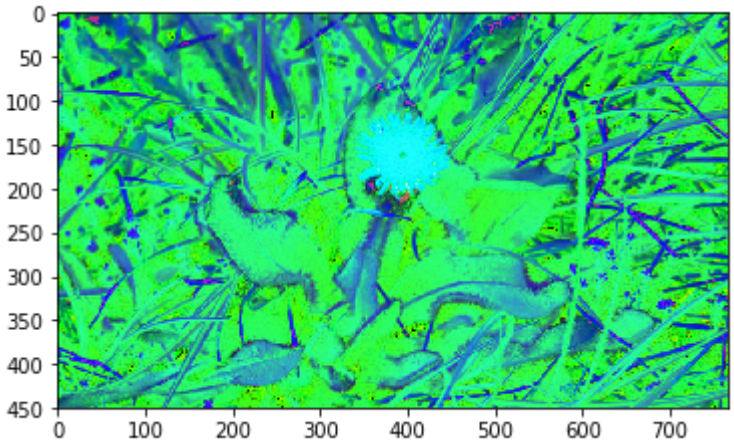
In [1]:

```
import numpy as np
import cv2
import matplotlib.pyplot as plt

#We'll change the image from RGB to HSV colour space and apply a mask
#HSV ranges for mask..
lower_red = np.array([0, 50, 50])
upper_red = np.array([16, 255, 255])

#Files to analyse
close_up="./orange-hawkweed-01.jpg"
aerial="./aerial-hawkweed.jpg"
```

Lets try masking a close up

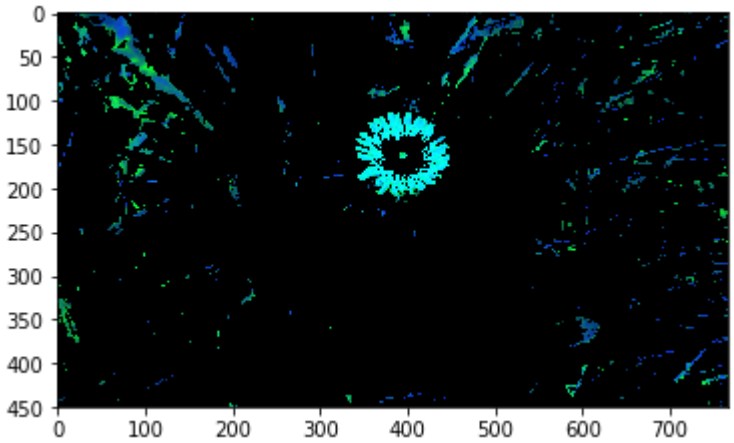
In [2]:

```
# (1) Import the file to be analyzed
image = cv2.imread(close_up)
# (2) Convert the RGB image to the HSV colour space
image_hsv=cv2.cvtColor(image, cv2.COLOR_BGR2HSV)
plt.imshow(image_hsv)
plt.show()
```



In [3]:

```
#set the mask
mask0 = cv2.inRange(image_hsv, lower_red, upper_red)
#Display the masked image
output_hsv = image_hsv.copy()
output_hsv[np.where(mask0==0)] = 0
plt.imshow(output_hsv)
plt.show()
```



Now let's try and mask the aerial image

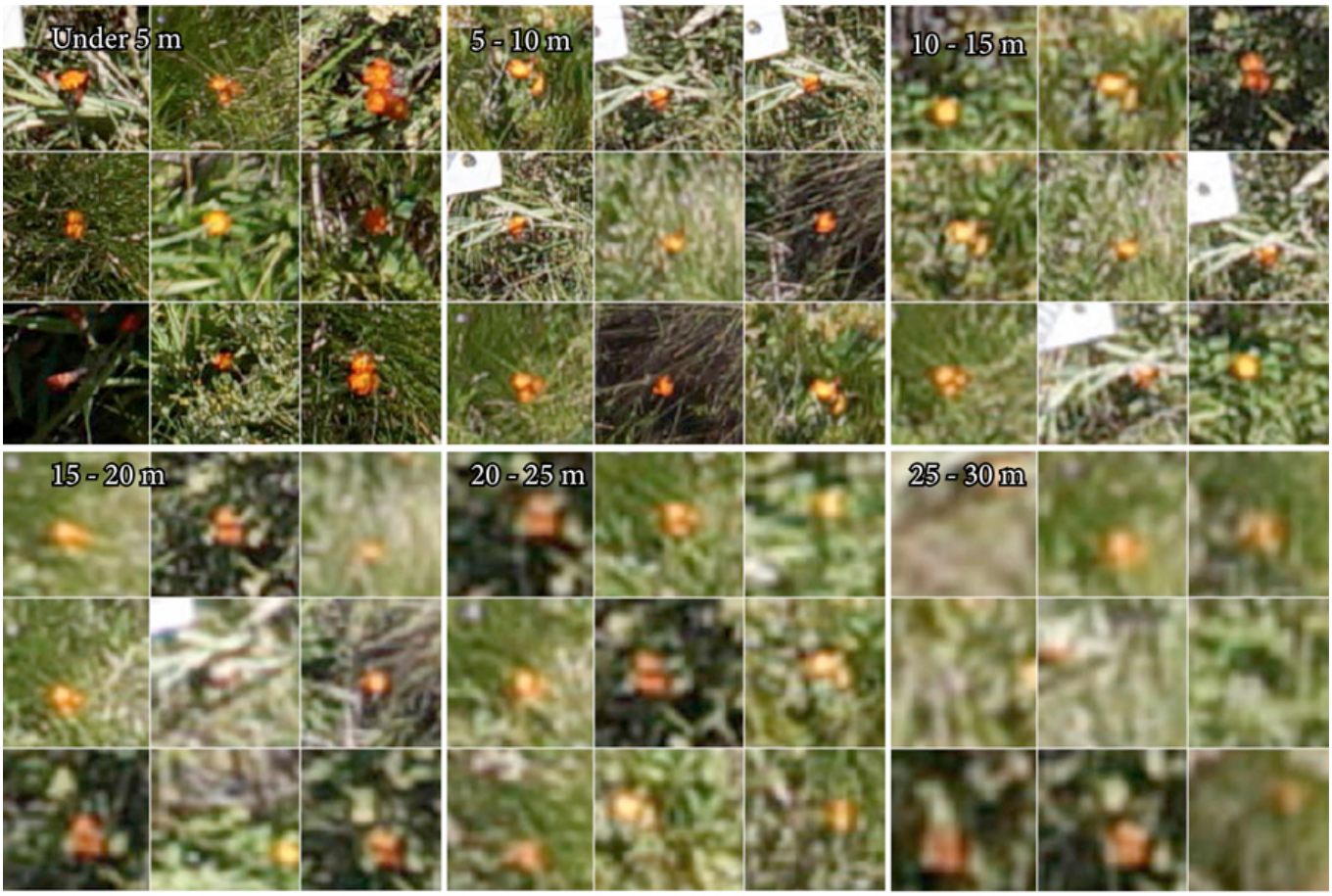
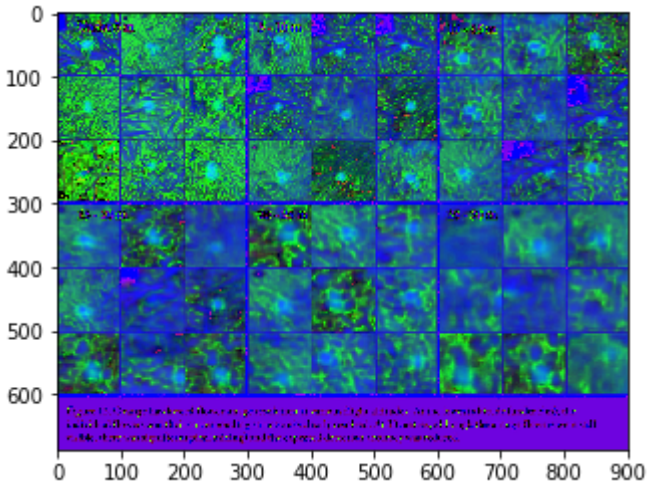


Figure 12. Orange hawkweed flower image resolution at various flight altitudes. At the lowest altitude (under 5 m), the individual flowers and their corresponding structure is clearly resolved. At 30 metres, although the orange flowers were still visible, there was significant pixel mixing) and the expected detection accuracy was reduced.

In [4]:

```
# (3) Import the file to be analyzed
image = cv2.imread(aerial)
# (4) Convert the RGB image to the HSV colour space
image_hsv=cv2.cvtColor(image, cv2.COLOR_BGR2HSV)
plt.imshow(image_hsv)
plt.show()
```



In [5]:

```
#set the mask
mask0 = cv2.inRange(image_hsv, lower_red, upper_red)
#Display the masked image
output_hsv = image_hsv.copy()
output_hsv[np.where(mask0==0)] = 0
plt.imshow(output_hsv)
plt.show()
```