In [1]:
```
import numpy as np
```

In [2]:
```
import matplotlib.pyplot as plt
```

In [3]:
```
from PIL import Image
```

In [4]:
```
img = Image.open(r'C:\Users\komme\OneDrive\Desktop\parrot.jpg')
img
```

Out[4]:

In [5]:
```
img1 = Image.open(r'D:\animals.jpg')
img1
```

Out[5]:

In [10]:
```
img1
```

Out[10]:

In [6]:
```
type(img1)
```

Out[6]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [7]:
```
animals_arr = np.asarray(img1)      #change image to array
animals_arr
```

Out[7]:
```
array([[[174, 182,  73],
        [179, 186,  82],
        [136, 142,  52],
        ...,
        [ 23,  25,  12],
        [ 39,  41,  17],
        [ 64,  63,  32]],

       [[122, 128,  18],
        [124, 128,  31],
        [116, 119,  38],
        ...,
        [ 29,  30,  22],
        [ 42,  43,  25],
        [ 60,  60,  34]],

       [[ 86,  89,   0],
        [ 97, 100,   9],
        [ 99,  99,  25],
        ...,
        [ 26,  28,  23],
        [ 38,  42,  28],
        [ 57,  58,  42]],

       ...,

       [[ 62,  85,  31],
        [ 47,  68,  11],
        [ 46,  63,  11],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 15,  20,  23]],

       [[ 93, 100,  56],
        [ 72,  81,  18],
        [ 64,  72,   0],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 15,  20,  23]],

       [[106, 100,  64],
        [ 94,  93,  28],
        [ 89,  92,   1],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 14,  19,  22]]], dtype=uint8)
```

In [11]:
```
animals_arr.shape      # shape gives the hight ,width and 3d channel(red,green,b
```

Out[11]:
```
(240, 429, 3)
```

In [14]:
```
ani_arr = animals_arr.copy()
ani_arr
```

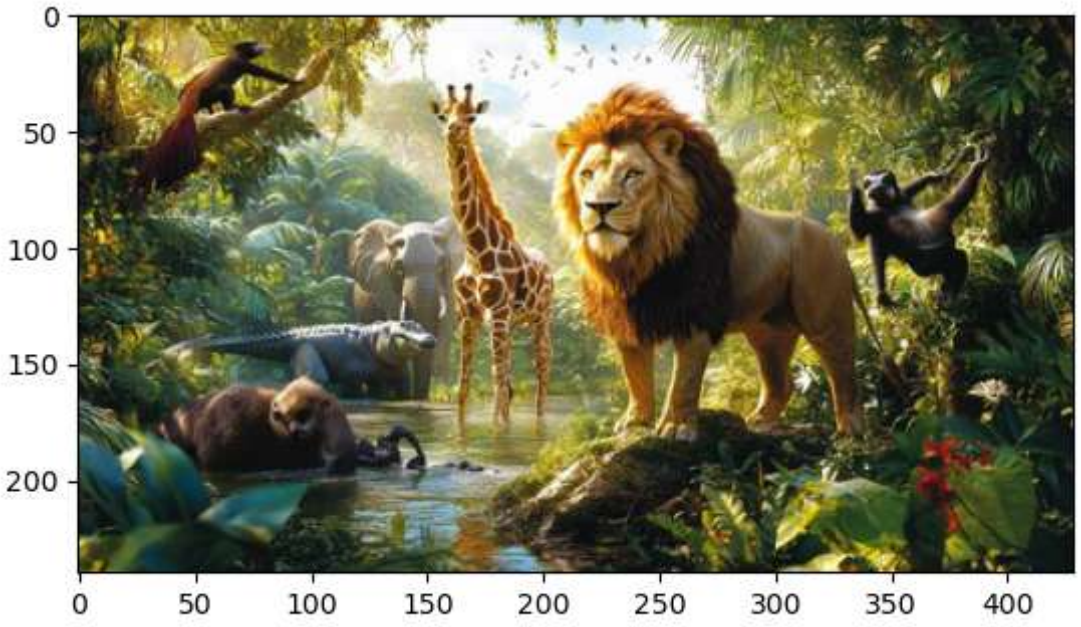
Out[14]:
```
array([[[174, 182,  73],
        [179, 186,  82],
        [136, 142,  52],
        ...,
        [ 23,  25,  12],
        [ 39,  41,  17],
        [ 64,  63,  32]],

       [[122, 128,  18],
        [124, 128,  31],
        [116, 119,  38],
        ...,
        [ 29,  30,  22],
        [ 42,  43,  25],
        [ 60,  60,  34]],

       [[ 86,  89,   0],
        [ 97, 100,   9],
        [ 99,  99,  25],
        ...,
        [ 26,  28,  23],
        [ 38,  42,  28],
        [ 57,  58,  42]],

       ...,

       [[ 62,  85,  31],
        [ 47,  68,  11],
        [ 46,  63,  11],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 15,  20,  23]],

       [[ 93, 100,  56],
        [ 72,  81,  18],
        [ 64,  72,   0],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 15,  20,  23]],

       [[106, 100,  64],
        [ 94,  93,  28],
        [ 89,  92,   1],
        ...,
        [ 16,  21,  24],
        [ 15,  20,  23],
        [ 14,  19,  22]]], dtype=uint8)
```

In [15]:
```
ani_arr == animals_arr
```

Out[15]:
```
array([[[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       ...,

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]]])
```

In [16]:
```
plt.imshow(animals_arr)
```

Out[16]:
```
<matplotlib.image.AxesImage at 0x2586a8a7f80>
```




In [29]:
```
animals_arr.shape
```

Out[29]:
```
(240, 429, 3)
```

In [19]:
```
parr = np.asarray(img)
parr
```

Out[19]:
```
array([[[ 53,  57,  40],
        [ 52,  56,  39],
        [ 51,  55,  38],
        ...,
        [ 39,  48,  29],
        [ 39,  48,  29],
        [ 39,  48,  29]],

       [[ 52,  56,  39],
        [ 52,  56,  39],
        [ 51,  55,  38],
        ...,
        [ 37,  49,  29],
        [ 37,  49,  29],
        [ 37,  49,  29]],

       [[ 51,  55,  38],
        [ 51,  55,  38],
        [ 50,  54,  37],
        ...,
        [ 36,  48,  28],
        [ 36,  48,  28],
        [ 36,  48,  28]],

       ...,

       [[191, 166, 159],
        [190, 165, 158],
        [189, 164, 157],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]],

       [[198, 173, 166],
        [198, 173, 166],
        [197, 172, 165],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]],

       [[203, 178, 171],
        [202, 177, 170],
        [201, 176, 169],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]]], dtype=uint8)
```

In [20]:
```
plt.imshow(parr)
```

Out[20]:
```
<matplotlib.image.AxesImage at 0x2586a7b9640>
```


In [21]:
```
parr.shape
```

Out[21]: (960, 1280, 3)

In [22]:
```
parr_red = parr.copy()
parr_red
```

Out[22]:
```
array([[[ 53,  57,  40],
        [ 52,  56,  39],
        [ 51,  55,  38],
        ...,
        [ 39,  48,  29],
        [ 39,  48,  29],
        [ 39,  48,  29]],

       [[ 52,  56,  39],
        [ 52,  56,  39],
        [ 51,  55,  38],
        ...,
        [ 37,  49,  29],
        [ 37,  49,  29],
        [ 37,  49,  29]],

       [[ 51,  55,  38],
        [ 51,  55,  38],
        [ 50,  54,  37],
        ...,
        [ 36,  48,  28],
        [ 36,  48,  28],
        [ 36,  48,  28]],

       ...,

       [[191, 166, 159],
        [190, 165, 158],
        [189, 164, 157],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]],

       [[198, 173, 166],
        [198, 173, 166],
        [197, 172, 165],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]],

       [[203, 178, 171],
        [202, 177, 170],
        [201, 176, 169],
        ...,
        [ 31,  42,  38],
        [ 31,  42,  38],
        [ 31,  42,  38]]], dtype=uint8)
```

In [23]:
```
parr_red == parr
```

Out[23]:
```
array([[[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       ...,

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]]])
```

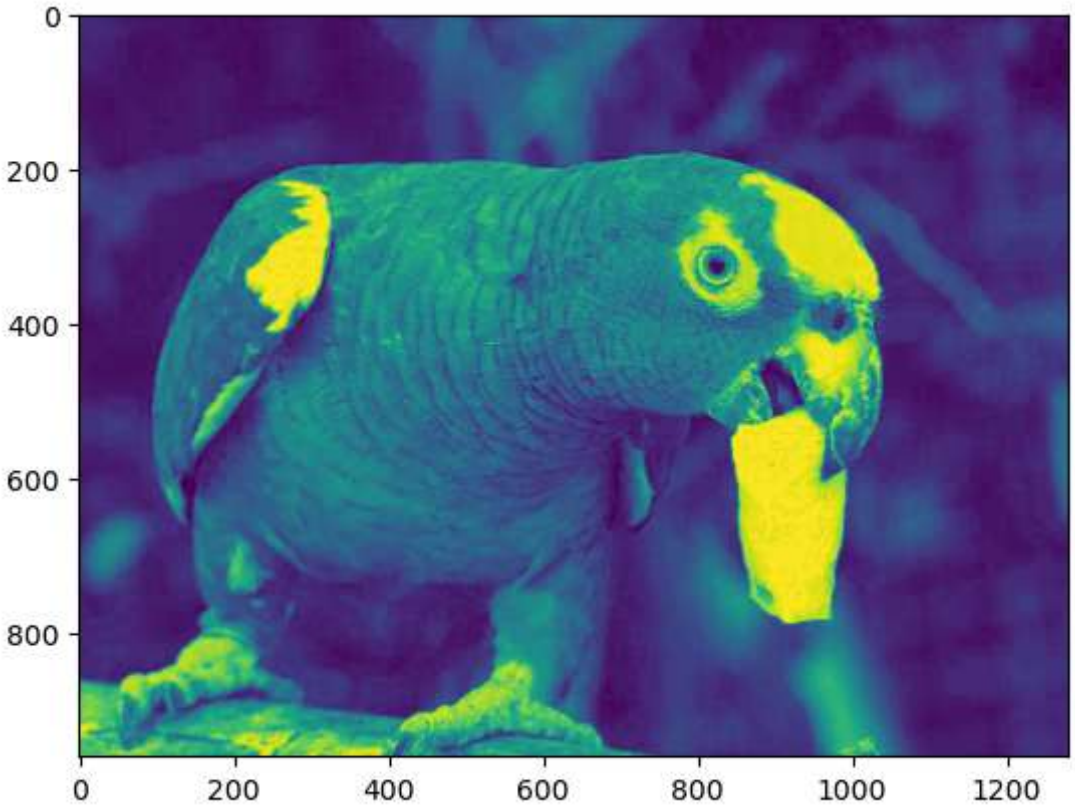
# changing baground colors of image

In [24]:
```
parr_red.shape
```

Out[24]:
```
(960, 1280, 3)
```

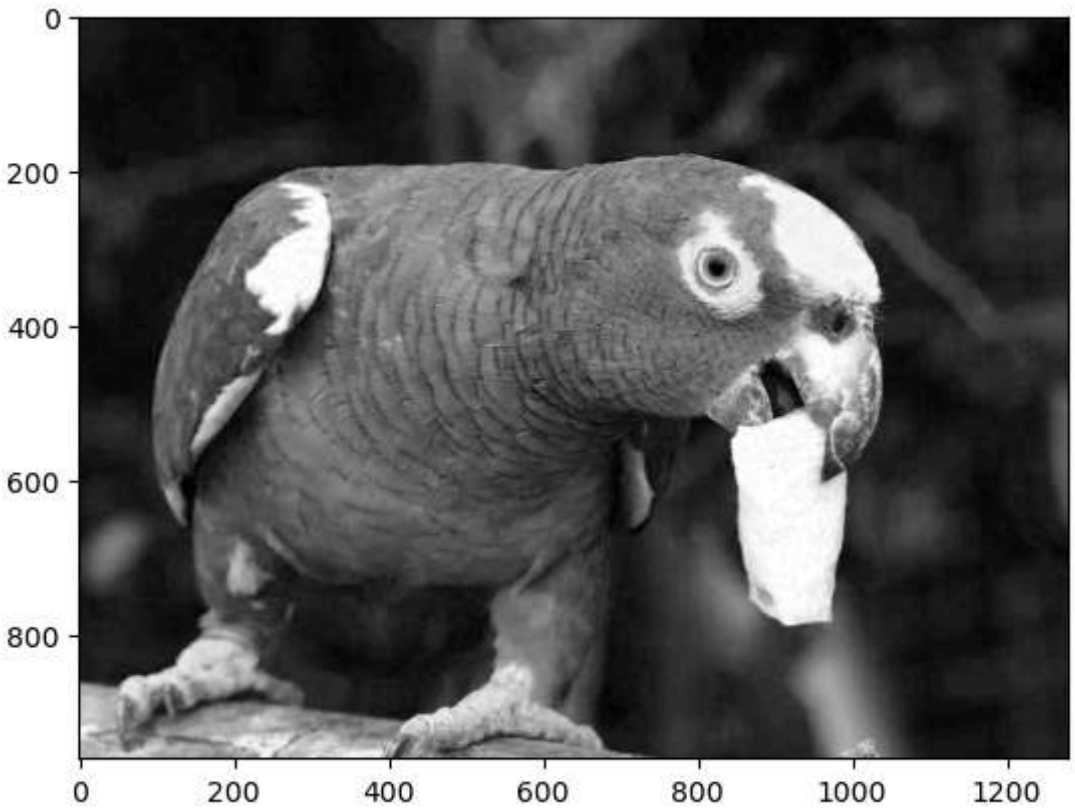
In [25]:
```
plt.imshow(parr_red[:,:,0])       # changing parrot image array rows and columns
```

Out[25]: <matplotlib.image.AxesImage at 0x2586b2d53d0>



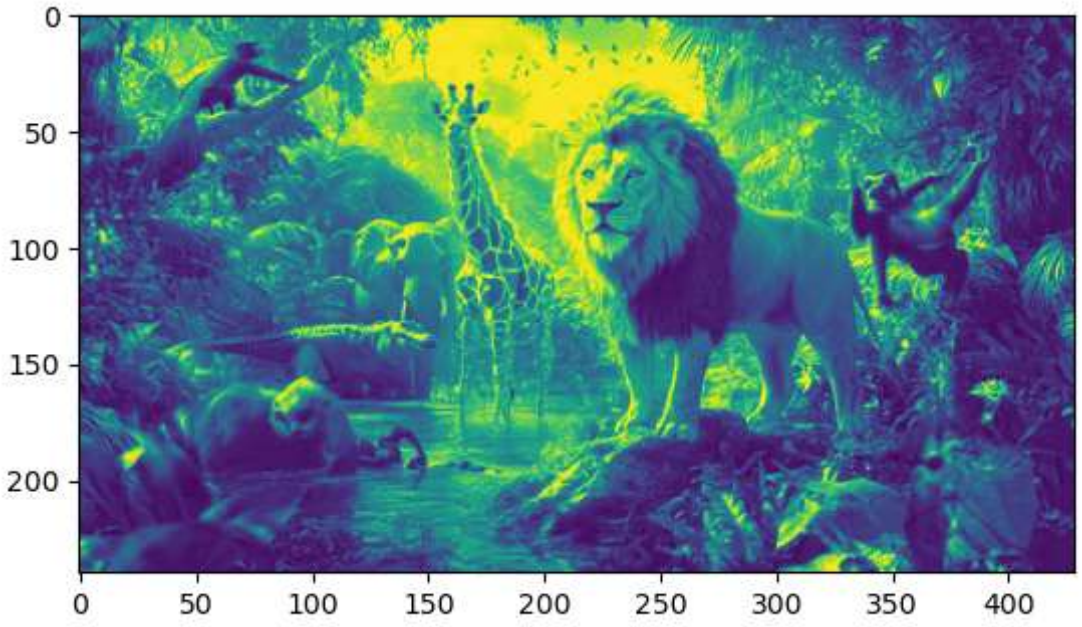

In [26]:
```
plt.imshow(parr_red[:,:,0], cmap = 'gray')
```

Out[26]: <matplotlib.image.AxesImage at 0x2586b2d4470>




In [30]:
```
plt.imshow(ani_arr[:,:,0])
```

Out[30]: <matplotlib.image.AxesImage at 0x2586abddfd0>

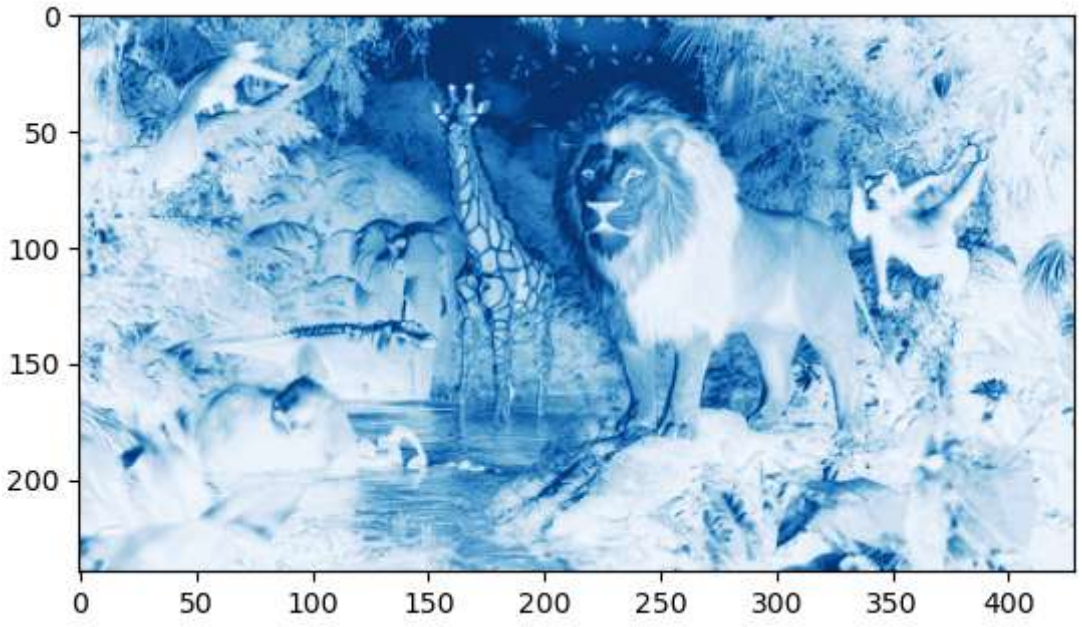



In [31]:
```
ani_arr.shape
```

Out[31]:
```
(240, 429, 3)
```

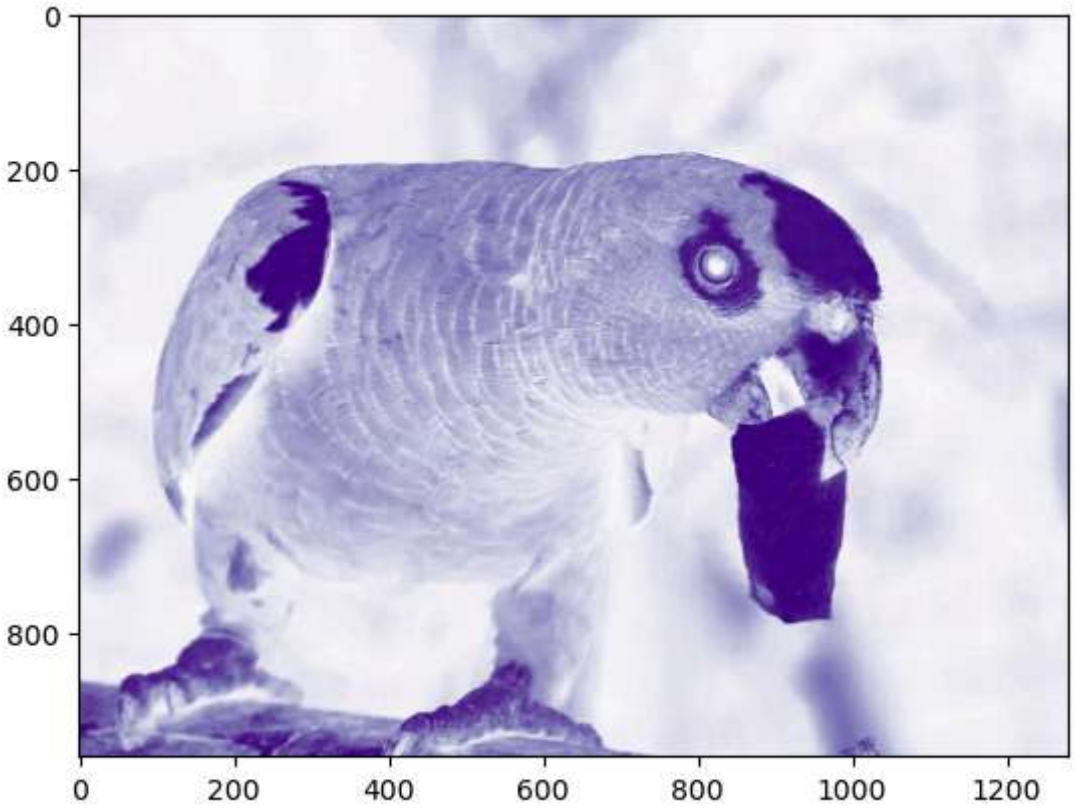
In [37]:
```
plt.imshow(ani_arr[:,:,0], cmap = 'Blues')
```

Out[37]:
```
<matplotlib.image.AxesImage at 0x2586c136240>
```



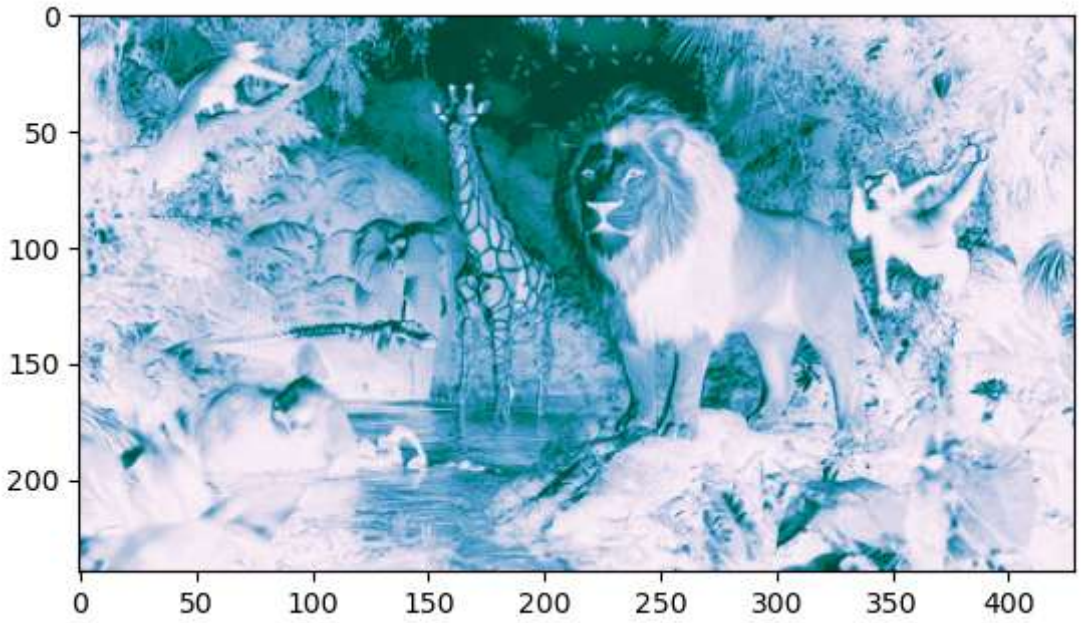

In [38]:
```
plt.imshow(parr_red[:,:,0], cmap = 'Purples')
```

Out[38]:
```
<matplotlib.image.AxesImage at 0x2587336eae0>
```



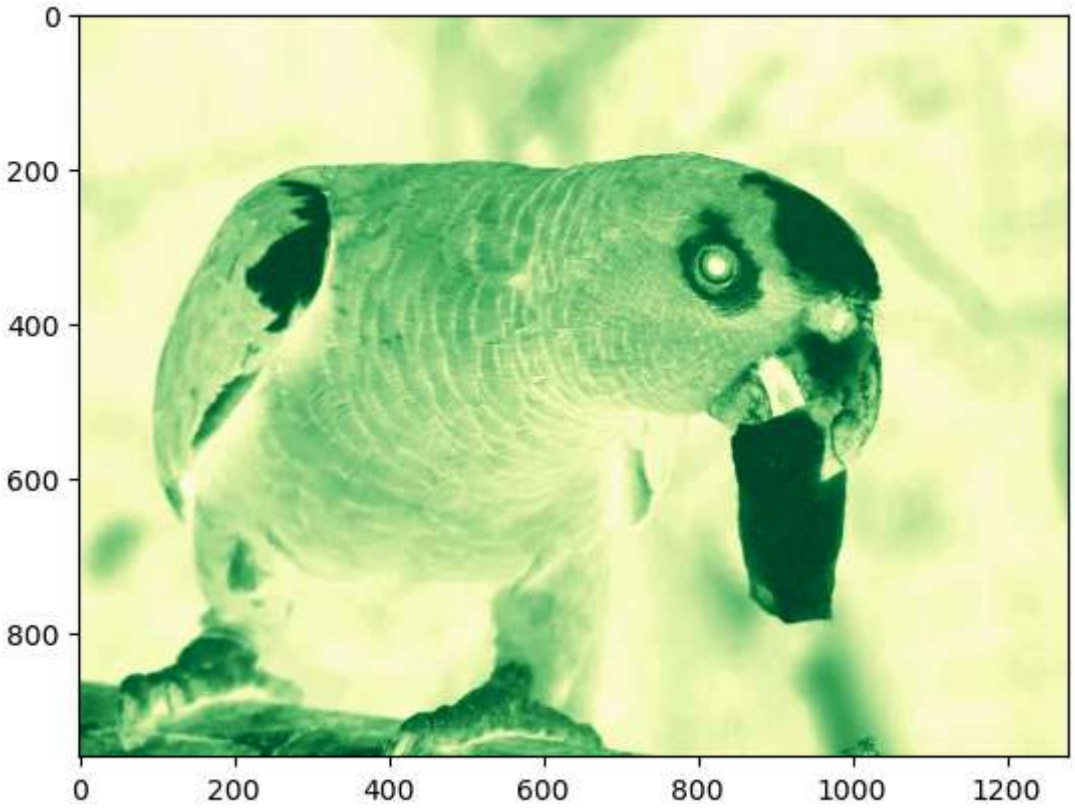

In [39]:
```
plt.imshow(ani_arr[:,:,0], cmap = 'PuBuGn')
```

Out[39]: <matplotlib.image.AxesImage at 0x258733dfdd0>




In [40]:
```
plt.imshow(parr_red[:,:,0], cmap = 'YlGn')
```

Out[40]: <matplotlib.image.AxesImage at 0x258733fde50>




In [ ]: