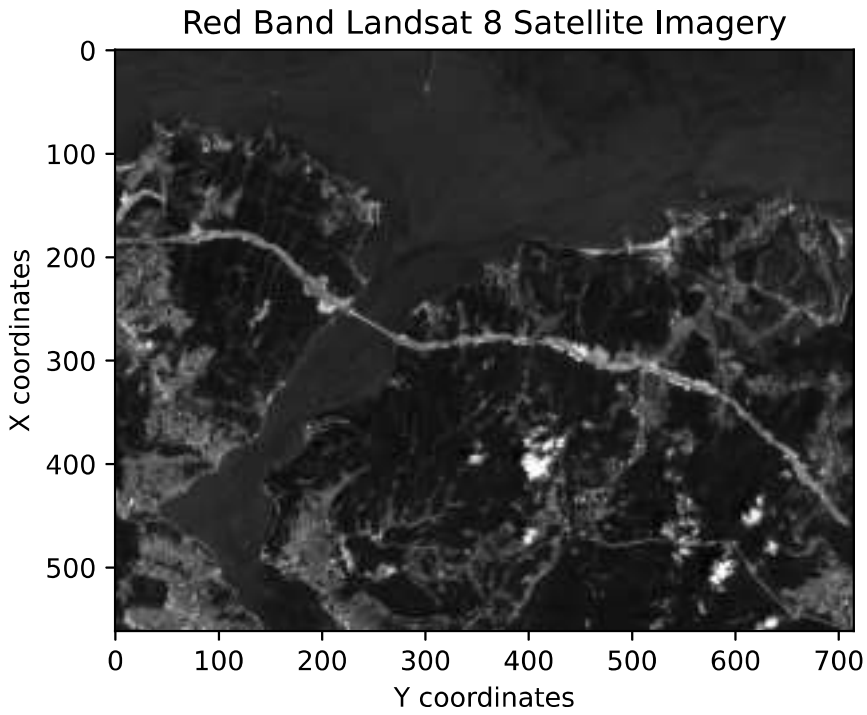
In [ ]:
```
### NDVI for Landsat 8
```

In [2]:
```
import matplotlib.pyplot as plt
from skimage import *
import numpy as np
from skimage.viewer import ImageViewer
from tifffile import *
import matplotlib.patches as mpatches
from skimage import io
```

In [3]:
```
#Read red and nir bands
red =io.imread('test_images_tiff/B4.tif')
nir = io.imread('test_images_tiff/B5.tif')
```

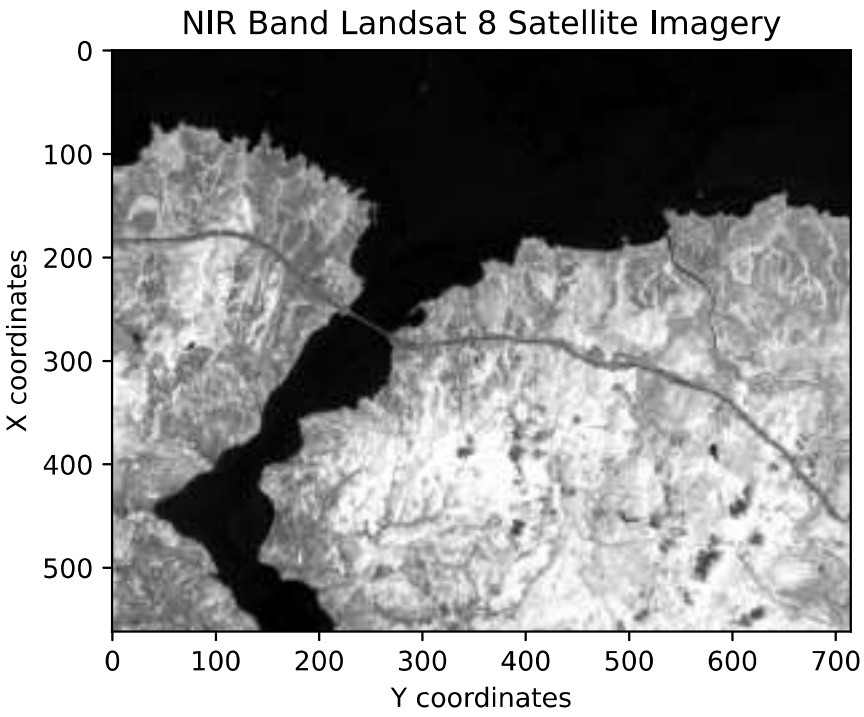
In [4]:
```
#plot red band
plt.title("Red Band Landsat 8 Satellite Imagery")
plt.xlabel("Y coordinates")
plt.ylabel("X coordinates")
plt.imshow(red)
```

Out[4]: <matplotlib.image.AxesImage at 0x7f3b9356b820>



In [5]:
```
#plot nir band
plt.title("NIR Band Landsat 8 Satellite Imagery")
plt.xlabel("Y coordinates")
plt.ylabel("X coordinates")
plt.imshow(nir)
```

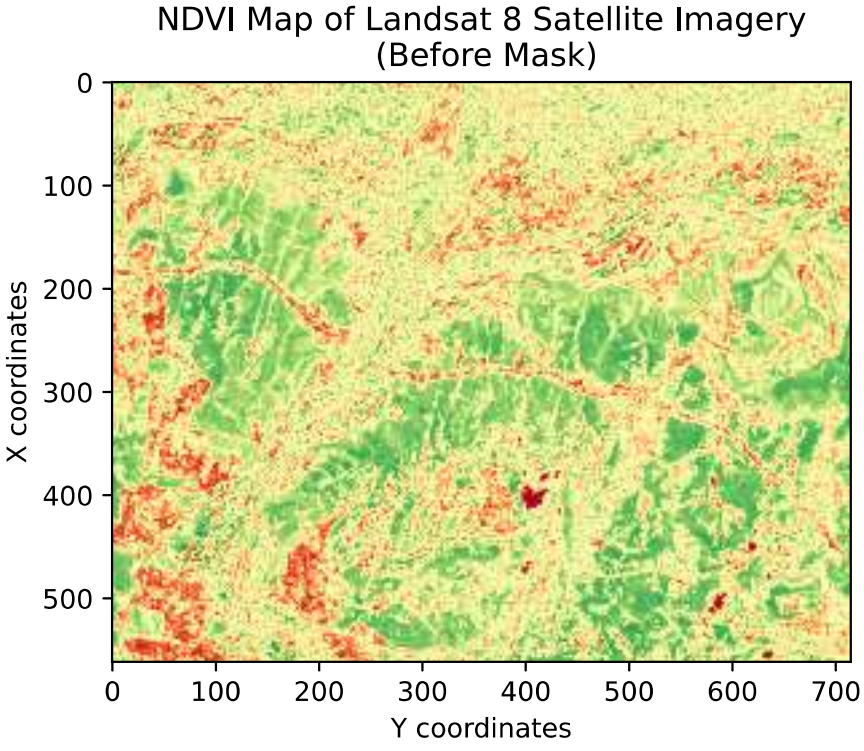
Out[5]: <matplotlib.image.AxesImage at 0x7f3b9302ebe0>



In [6]:

```
#import create_ndvi function in order to calculate ndvi
from utils import create_ndvi
ndvi=create_ndvi(nir_band=nir,red_band=red)
ndvi_in_uint = (ndvi*255).astype('uint8')
ndvi_before_mask=ndvi_in_uint[:,:,1]
plt.title("NDVI Map of Landsat 8 Satellite Imagery\n (Before Mask)")
plt.xlabel("Y coordinates")
plt.ylabel("X coordinates")
plt.imshow(ndvi_before_mask,cmap='RdYlGn',vmin=0,vmax=255)
```

Out[6]: <matplotlib.image.AxesImage at 0x7f3b91702f70>



In [7]:

```
#import mask function in order to mask water bodies
from utils import water_mask_ndvi_for_landsat_8
```

```
img = water_mask_ndvi_for_landsat_8(ndvi_band=ndvi,nir_band=nir)
plt.title("NDVI Map of Landsat 8 Satellite Imagery\n (After Mask)")
plt.xlabel("Y coordinates")
plt.ylabel("X coordinates")
plt.imshow(img,cmap='RdYlGn',vmin=0,vmax=255)
plt.savefig('outputs/NDVI_Landsat_8.png',format="png")
```