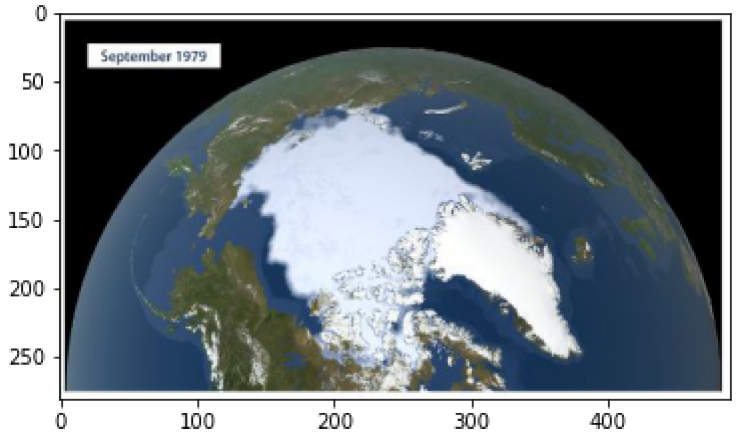
In [5]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [6]:
```
from skimage import io
photo = io.imread(r"C:\Users\admin\Desktop\Image_processing_project\before.jpg")
photo.shape
```

Out[6]: (281, 490, 3)

In [7]:
```
%matplotlib inline
```

In [8]:
```
plt.imshow(photo);
```

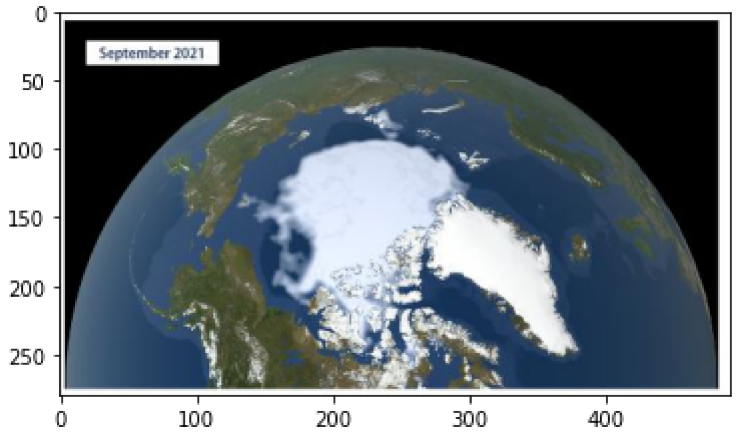


In [9]:
```
photo2 = io.imread(r"C:\Users\admin\Desktop\Image_processing_project\after.jpg")
photo2.shape
```

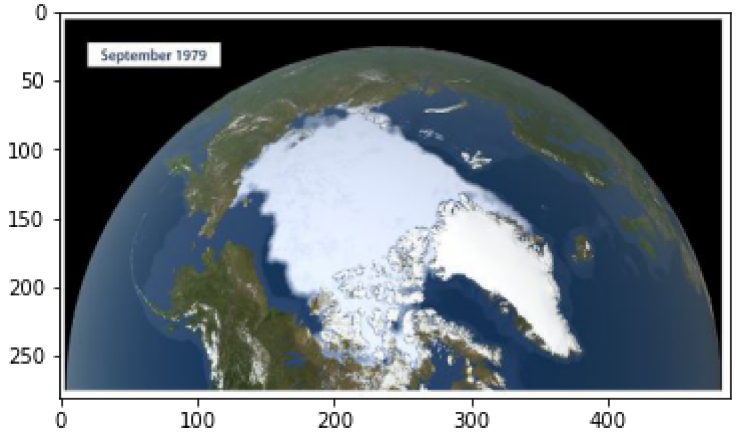
Out[9]: (280, 491, 3)

In [10]:
```
plt.imshow(photo2)
```

Out[10]: <matplotlib.image.AxesImage at 0x13c3979d3d0>

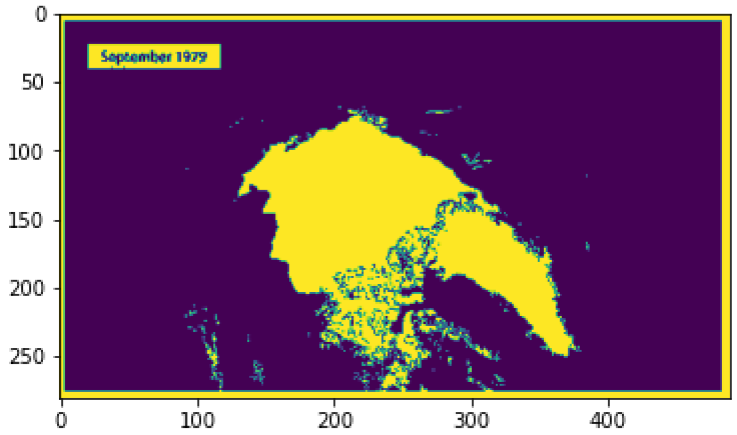


In [15]:
```
plt.imshow(photo); # will display blue image
```



In [17]:
```
threshold = 200  # Adjust this threshold value if necessary
binary_image = np.where(np.sum(photo, axis=2) > threshold * 3, 1, 0)
plt.imshow(binary_image)
```

Out[17]: <matplotlib.image.AxesImage at 0x13c3a9cc220>

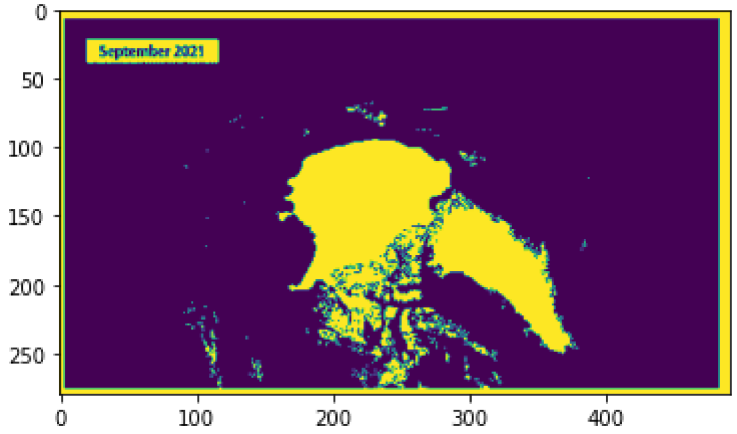


In [19]:
```
percentage_white = (np.sum(binary_image) / binary_image.size) * 100
percentage_white
```

Out[19]: 22.698089912121432

In [20]:
```
threshold2 = 200  # Adjust this threshold value if necessary
binary_image2 = np.where(np.sum(photo2, axis=2) > threshold2 * 3, 1, 0)
plt.imshow(binary_image2)
```

Out[20]: <matplotlib.image.AxesImage at 0x13c3aa283a0>



In [21]:
```
percentage_white2 = (np.sum(binary_image2) / binary_image2.size) * 100
percentage_white2
```

Out[21]: 19.47846959557754

In [22]:
```
type(percentage_white2)
```

Out[22]: numpy.float64

In [25]:
```
percentage_reduction=round((percentage_white-percentage_white2),2)
percentage_reduction
```

Out[25]: 3.22

In [ ]:
```

```