



SeaDAS Homework Exercise

Prerequisites

- Installation of SeaDAS on your computer



Exercise Outline

- Open OLCI Level-2 data in SeaDAS
- View chlorophyll-a data for the Chesapeake Bay
- View Level-2 flags for the data
- Calculate statistics for the Level-2 chlorophyll-a data for a small area of Chesapeake Bay – A predefined Region of Interest (**ROI**)



Download Required Data for this Exercise

- Download the OLCI Level-2 data file and a vector shapefile on your computer from the [training webpage](#):

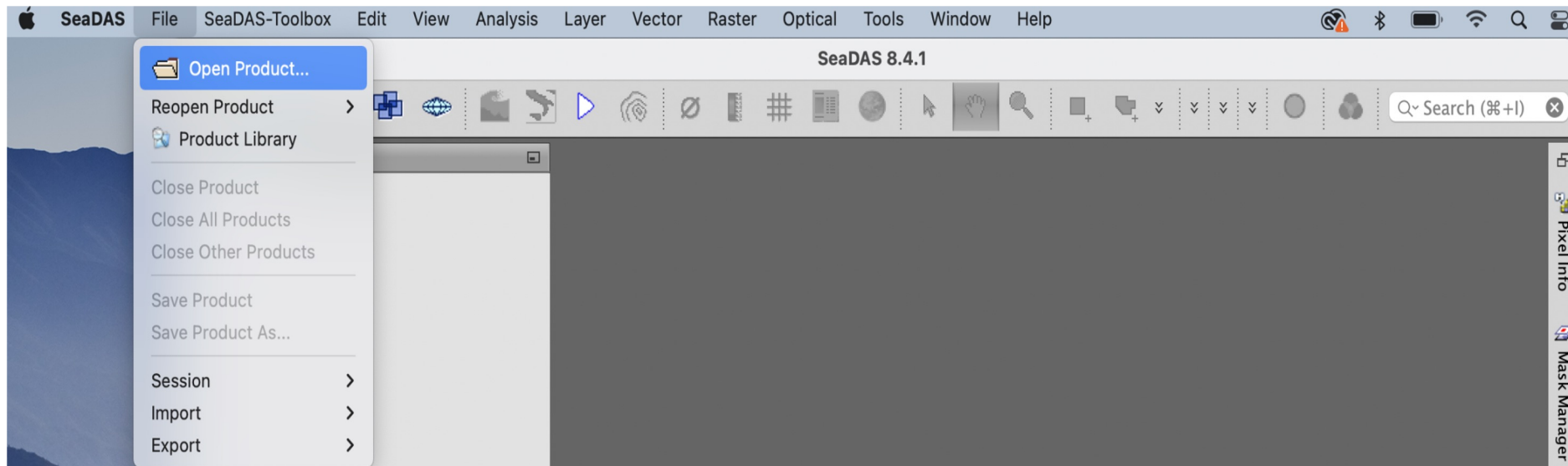
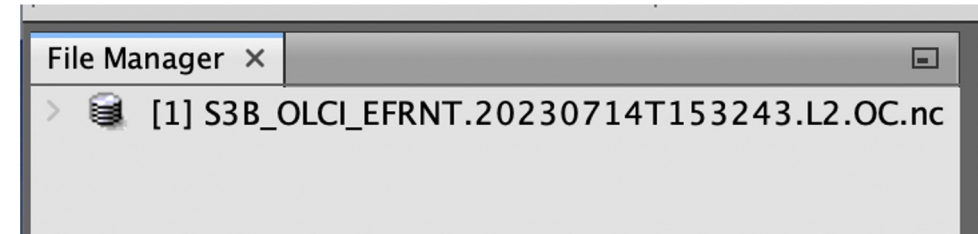
Data File: S3B_OLCI-EFRNT.20230714T153243.L2.OC.nc

ROI Shapefile Folder: CB_SmallArea



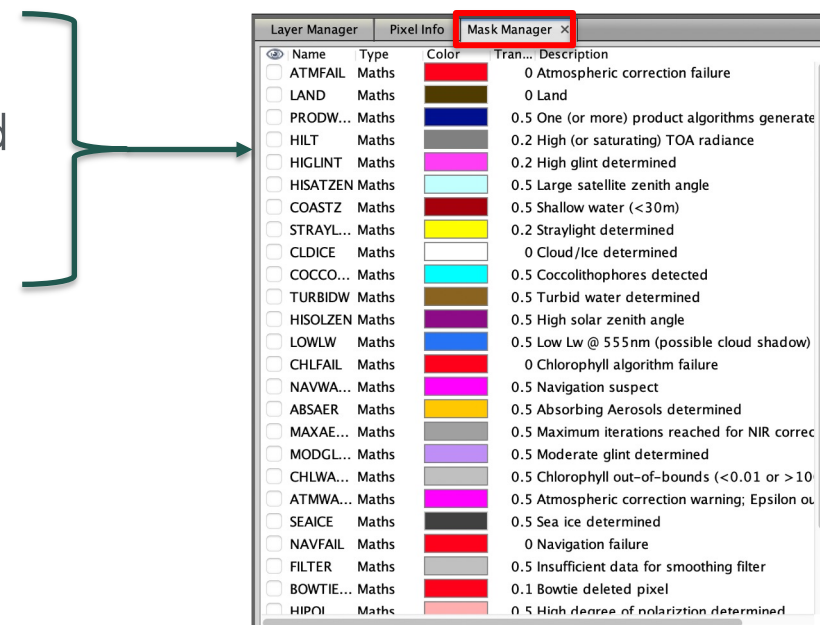
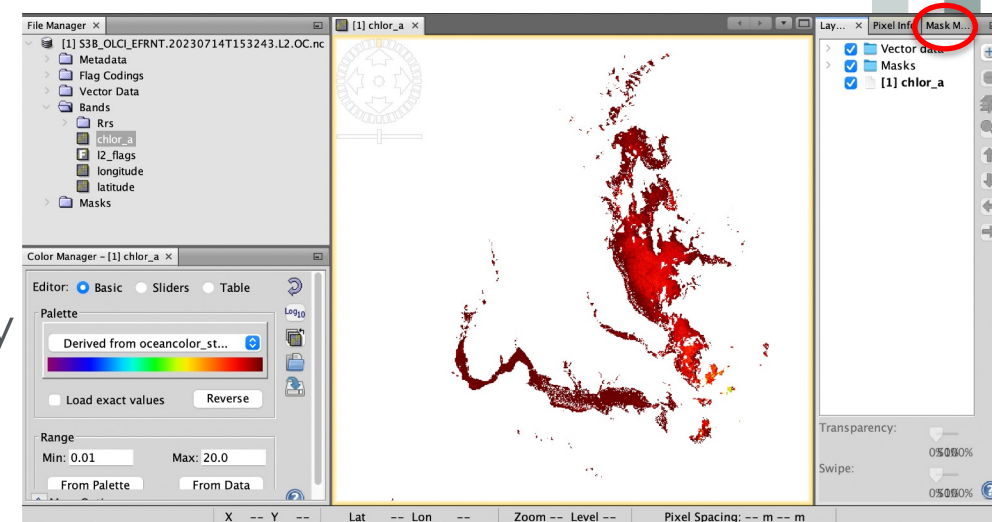
Open the OLCI Level-2 Data File

1. In the SeaDAS window:
 - On the top ribbon go to **File > Open Product** and select **S3B_OLCI_EFRNT.20230714T153243.L2.OC.nc** from your computer.
 - You will see the OLCI file name in the **File Manager**.



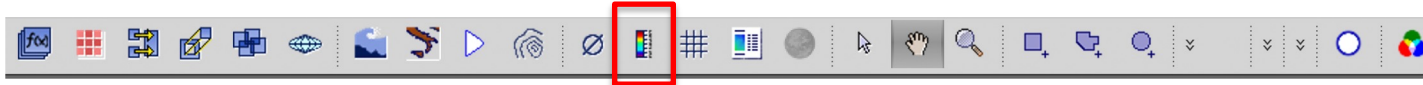
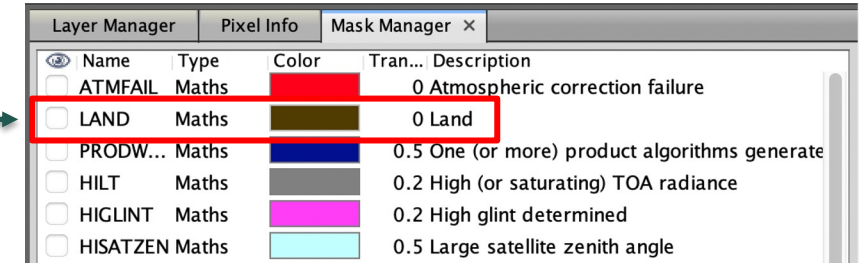
View and Select the OLCI Band

- Click on the down arrow next to the file name > **Bands** > **chlor-a**.
- Double-click on **chlor-a** to see the image.
- You can zoom in and out on the **chlor-a** image by moving your cursor in the image window.
- Click on the **Mask Manager** tab on the right side of the main SeaDAS window.
- You will see the list of flags that can be masked in the **Mask Manager** window.
- By changing the size of the window, you can read the description of each flag.
- You can change the color of each flag mask by clicking on the color bar.



Add Land Mask and Color

- Click the **LAND** mask to turn it on.
- In the **Color Manager** window to the left of the Chlor-a window change **Range** ☐ change **Min: 0.5** and **Max: 70**
- Click on **Show/hide color bar for the selected image**



- You will get a color bar to the right of the Chlor-a image.

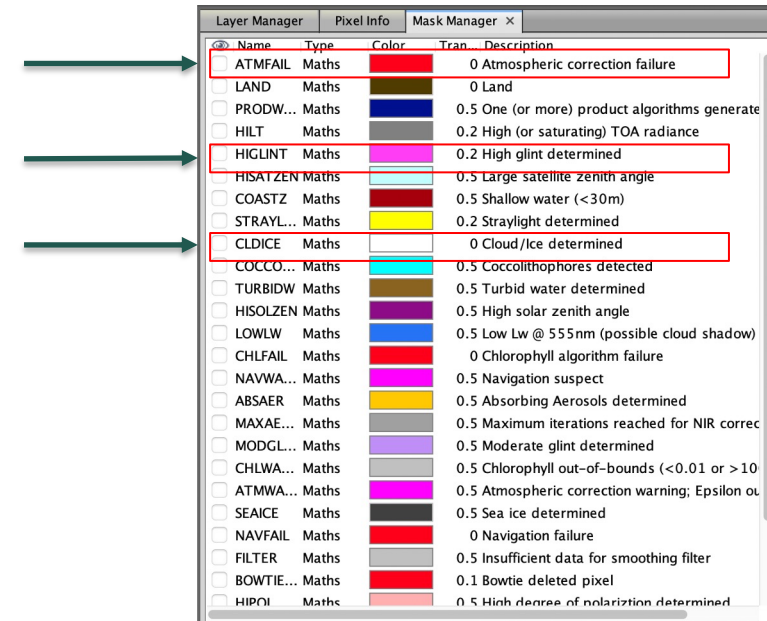
Now take a screenshot of the Chlor-a window with the color bar and save on your computer as an image named **chlor.png**. You will be submitting this image in your homework.



Check Level-2 Flags

Click the following flag masks and toggle them on and off. You may have to change the mask color if it is white to be able to view it.

- ATMFAIL
- CLDICE
- HIGLINT



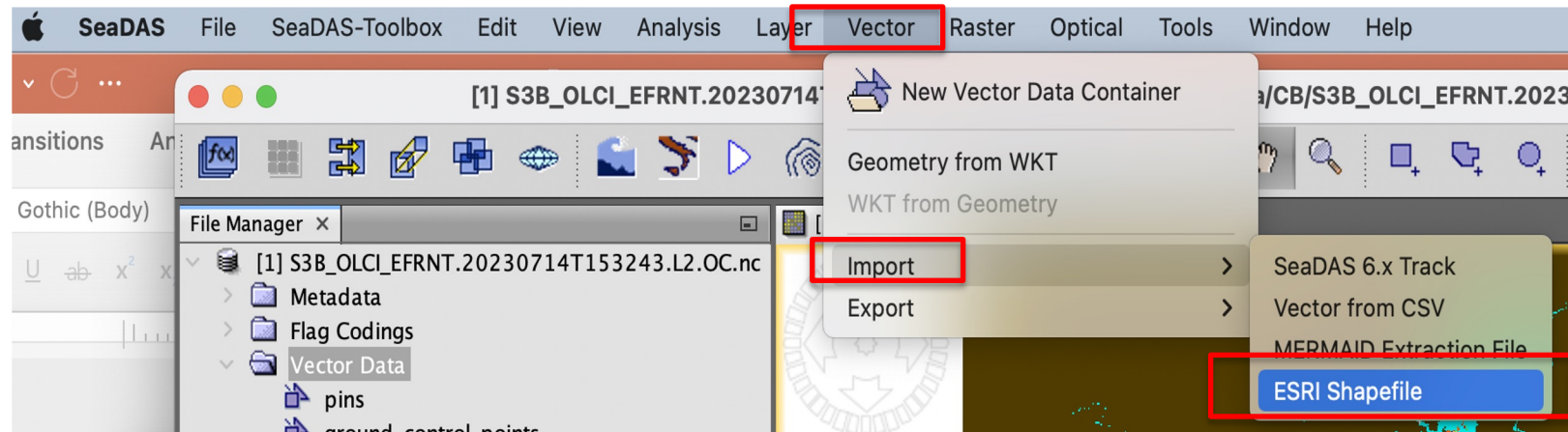
With only the Land and CLDICE masks on, take a screenshot of the chlor-a image and save as CLDICE.png. You will be submitting this image in your homework.



Import ROI to the Image

In the SeaDAS window:

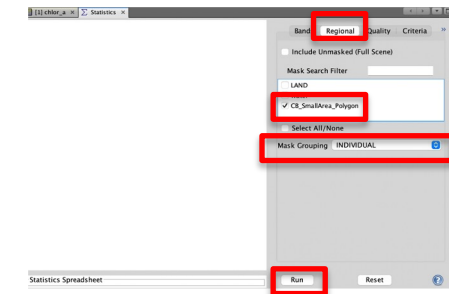
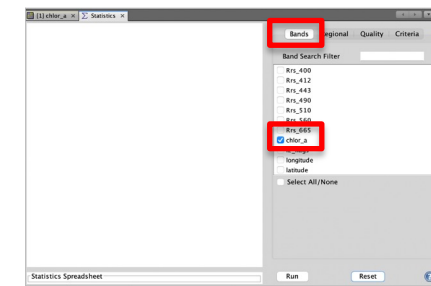
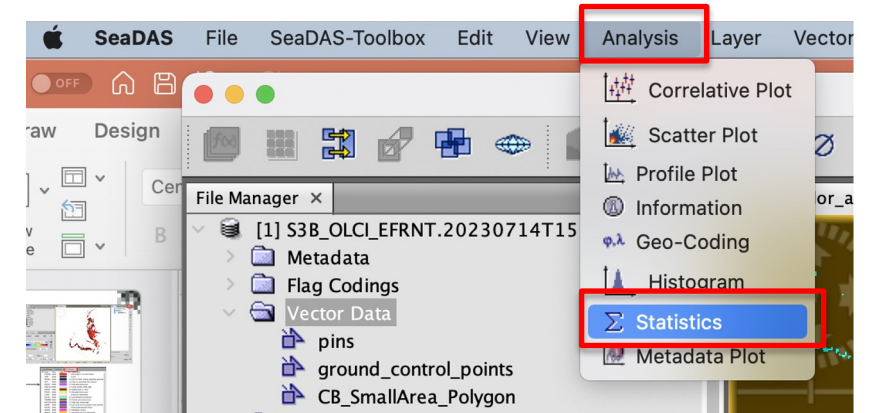
- On the top ribbon go to **Vector > Import ESRI Shapefile**.
- Select ROI folder **CB_SmallArea > CB_SmallArea_polygon.shp** previously saved on your computer.
- You will see the ROI on the **cholr-a** image in the Chesapeake Bay. Zoom in to view the ROI.



Calculate Statistics for Chlorophyll-a

From the top ribbon click on **Analysis > Statistics**.

- In the Statistics window, ensure that **Band > chlor-a** is selected.
- In the Statistics window, select **Regional > CB_SmallArea_Polygon** and select **Mask Grouping > INDIVIDUAL**.
- Now select **Run**.
- You will see a window with statistics for chlor_a for the ROI: **CB_SmallArea_Polygon**.



Save the results by taking a screenshot.
You will be answering homework questions
based on the results.

