



Questions & Answers Session 1

Please type your questions in the Question Box. We will try our best to answer all your questions. If we don't, feel free to contact Amita Mehta (amita.v.mehta@nasa.gov) or Sean McCartney (sean.mccartney@nasa.gov).

Question 1: Is SeaBASS data available only for the US or for the whole planet?

Answer 1: It covers many oceanic regions globally. You can draw over the map to see data availability.

Question 2: Why is it in SeaBASS files, the date is not requested, only time is requested?

Answer 2: Data are requested if you scroll down below the map - in the example we asked for chlorophyll.

Question 3: Is there an automated way to generate a SeaBASS file header for already structured data?

Answer 3: You can create a template to provide a header. There is a forum for inquiries related to SeaBASS:

<https://seabass.gsfc.nasa.gov/>

Question 4: I am currently using a Windows operating system. Can I still go ahead and carry out the exercise?

Answer 4: Yes, the instructions are there for Windows as well.

Question 5: Si en los datos de GCOOS que se requieren se presentan valores de -9999. ¿Se conservan así en el momento de preparar el archivo para SeaBASS?

(Eng) If values of -9999 are present in the required GCOOS data, are these values preserved when preparing the file for SeaBASS?

Answer 5: No, you can ignore them or keep them as long as you specify the missing data value in the header section.

Question 6: How do I download in situ data from SeaBASS?

Answer 6: Please follow the Exercise and the demo.



Question 7: Can you please share the link for the SeaBASS data download?

Answer 7: <https://seabass.gsfc.nasa.gov/search#bio>

Question 8: I am trying to install SeaBASS after successfully installing the SeaDAS. A problem is that the SeaDAS has failed to detect Python.

Answer 8: You do need to have Python version 3.6 or higher in order to properly run SeaBASS and SeaDAS. Please consult the forum for specific answers to your question(s): <https://seabass.gsfc.nasa.gov/>

Question 9: Are there any global products for suspended particulate matter (SPM)?

Answer 9: You can search SPM in SeaBASS keeping the global domain.

Question 10: I am installing the OCSSW plugin in SeaDAS but it is quite complicated to install it. Is there any way to walk me through the installation process in Ubuntu?

Answer 10: Refer to the following instructions found on the website:

https://appliedsciences.nasa.gov/sites/default/files/2021-12/Configuring_Linux_VirtualMachine_Windows.pdf

Question 11: Once I downloaded the data from SeaBASS as a .sb file I should open it in SeaDAS directly, isn't it? But it doesn't work, am I forgetting some steps?

Answer 11: You should be able to. If you are saving the results as text files, go to your settings and change the default to save types as plain text files (.txt) from rich text format (.rtf). When loading in satellite data, you have to select the satellite data then you can add in SeaBASS as a vector file in the satellite data. File, then import, the SeaBASS data will be loaded on top of your satellite data.

Question 12: Estoy realizando todos los pasos que nos indicaron pero no me arroja ningún resultado. ¿Cuál podría ser el motivo?

(Eng) I am doing all the steps that they indicated but it does not give me any results. What could be the reason?

Answer 12: It could be the symbology and the colors are not showing in the image itself.



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Question 13: Abro sesión en SeaBass y colocó rango de fecha, área de interés, seleccionó como producto clorofila y cuando selecciono Resultados se "reinician" todos los datos.

(Eng) I log into SeaBass and enter date range, area of interest, select chlorophyll as product and when I select Results all data is "reset".

Answer 13: In the exercise, there are screenshots given that demonstrate this.

Question 14: Can we measure water depth of small water bodies using remote sensing?

Answer 14: The Surface Water and Ocean Topography (SWOT) mission should be able to help with that (new mission scheduled for launch in Nov '22). Bathymetry from external sources can be applied to that.

<https://swot.jpl.nasa.gov/>

Question 15: In Exercise 1, p. 17: 16, in the SeaBASS file **e29f6ffdc2_ntb1_ch1.sb**, instructions say to delete lines with dates other than 11 October 2017. There are several dates listed in the file. Can you explain where exactly to delete lines?

Answer 15: You want to keep 11 Oct 2017 for now. Keeping dates means keeping all of their points within the file. Cut everything that is not the 11 Oct 2017 date. SeaBASS uses a validation step that has a preference for using in situ and satellite data collected within a 3-hour window.

Question 16: I added the SeaBASS data on modis-11oct17-mosaic, but when I went to investigate the reason "How many do you see on the image? Can you explain the difference?" I look for the .sb file and see one row of data. Did I make a mistake? Or when I added the data to mosaic it received all points as one mask vector? Please explain.

Answer 16: There are 4 lines. There are 3 points visible, even if there is only 1 line showing. Make sure you have downloaded the right .sb file as well.

Question 17: Can we do the same exercise using SNAP software?

Answer 17: We have not used SNAP for this exercise, but it is possible. The process should be the same.

Question 18: I have installed SeaDAS in Windows 10 with Python 3.10. But when I run SeaDAS it says "Remote Server is down. OCSSW is not accessible. Please Start the



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OCSSW remote server". When I am trying to configure the OCSSW remote server, it asks for the OCSSW Server Address, which I didn't find anywhere.

Answer 18: Currently, Windows will not work directly with OCSSW. You will have to configure a virtual machine running Linux in order to have the process work.

Question 19: Can you talk a little bit about the pros and cons of SeaDAS vs SNAP vs GEE?

Answer 19: They should have very similar features. If the data is available in GEE, the data does not need to be downloaded. TOA observations are available in GEE currently and are useful for a quick analysis. For something more in depth, SeaDAS is more useful. We will also showcase how to process data in a Unix/Linux based operating system using command line interface. SeaBASS and SNAP can be considered to be the same tool. SNAP is more useful for Sentinel/ESA data and SeaBASS 8 for NASA data.

Question 20: SeaBASS has little information on in situ data of the Arabian Sea. Is there another source of in situ data? Answer 20: If you draw a box around your area of interest (Arabian Sea), you do see results.

Question 21: How do I install/update OCSSW manually, on Windows based systems?

Answer 21: Refer to Q18. These instructions will be posted to the website in the next 24 hours:

https://appliedsciences.nasa.gov/sites/default/files/2021-12/Configuring_Linux_VirtualMachine_Windows.pdf

Question 22: When I try to add the land mask it is not loading and SeaDAS is not responding. Suggestions?

Answer 22: If you choose a cover and create a mask, it should respond. Depending on your machine and size of the file, the processing could take a while or experience issues. This can be resolved by cropping the image so the file size isn't as large.

Question 23: Can I import ocean modeled data (e.g. chlorophyll indeed after regriding) and compare with satellite imagery?

Answer 23: You can put it in SeaBASS format if it is a NetCDF file as a raster.



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Question 24: Where can I get the standard suspended particulate matter (SPM) satellite products, like Aqua MODIS Chl-a products?

Answer 24: SPM from satellite data is currently not available.

Question 25: Can you please repeat the data name for bathymetry from Q14?

Answer 25: In SeaDAS bathymetry from ETOPO is used:

<https://www.ngdc.noaa.gov/mgg/global/global.html>

Also, the ICESAT-2 mission provides bathymetry:

https://appliedsciences.nasa.gov/sites/default/files/2021-02/LakeWebinar_Week3_Final_0.pdf

Question 26: OCSSW is not working on Windows operating systems. Can the ARSET team demonstrate step-by-step Windows system configuration for SeaDAS installation?

Answer 26: Refer to Q18. We will provide instructions on how to configure OCSSW on Windows using a Linux virtual machine within the next 24 hours:

https://appliedsciences.nasa.gov/sites/default/files/2021-12/Configuring_Linux_VirtualMachine_Windows.pdf

Question 27: I can't enter the SeaBASS page. Apparently they are blocking all requests from the 132.248.121.0/24 network. Because from other networks of 132.248.X.X if we can.

We already validated our network, firewall and service providers, with ping if we arrive, but not through port 80 or 443.

Answer 27: Maybe SeaBASS could be experiencing issues.

Question 28: The date and time mentioned as 20090210 7:00:00 are in the SeaBASS file. Are the last four digits months and days?

Answer 28: The date and time mentioned are displayed in year/month/day format. In the example above that would read 2009-February-10th.

Question 29: When we try to validate any specific period of chlorophyll-a satellite data, do we need a certain number of in situ data? (E.g., a minimum amount?)

Answer 29: The larger the number of in situ data, the better.



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Question 30: Could you state again the time period of data in SeaBASS used in the presentation? Is it Jan-01-2012 to Dec-17-2021?

Answer 30: In the case study today we used January 1st 2012 to present.

Question 31: How many lakes in Tanzania are monitored by remote sensing? Have they changed a lot in the past decades?

Answer 31: Landsat missions have observed lakes in Tanzania for decades. There is a global surface water dataset derived from Landsat as well, available through Google Earth Engine (GEE). Refer to the links below to learn more:

https://www.usgs.gov/core-science-systems/nli/landsat/landsat-dynamic-surface-water-extent?qt-science_support_page_related_con=0#qt-science_support_page_related_con

https://developers.google.com/earth-engine/datasets/catalog/JRC_GSW1_3_GlobalSurfaceWater

Question 32: How does one download ocean current data for the Bay of Bengal region?

Answer 32: Ocean models can be used, but am not exactly sure about data for the Bay of Bengal region.

Question 33: Can the location for this exercise be different from the Gulf of Mexico?

Answer 33: The Gulf of Mexico case study is applicable for any region, but serves as a reference.

Question 34: In my SeaDAS on Mac, the option to change the symbology icon doesn't appear. Any suggestions?

Answer 34: Click on Layer Editor for the layer you want to select information for and then look at its symbology.

Question 35: What are the other advantages of SeaDAS?

Answer 35: SeaDAS has a graphical user interface as well as allows for OCSSW processing and other processes such as mosaicking. You can also process raw satellite data for 16 missions. You can fine tune the parameters and replicate all scientific processes from various data sources. It is also a NASA science product as well in the



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realm of reference tools that is supported and updated. There is also a user forum that can answer any questions you may have.

Question 36: How does SeaDAS help with cyclone tracking?

Answer 36: SeaDAS is not necessarily used for cyclone tracking, but you can upload satellite data that can be used for analysis in SeaDAS itself. SeaDAS also has the capability to read NetCDF files as well as Landsat data and replicate true color imagery.

Question 37: I've got a question about validation/in-situ measurements using UAVs in support of work conducted at NASA. Are there opportunities to support scientific research to validate satellite measurements using multispectral imaging, etc and has there been work in this area already? Is Goddard the main center working in this field?

Answer 37: There are instruments that are multispectral and they run out of multiple centers. In terms of work with UAVs, we will have to do more research and come back to this question.

For example please refer to the links below:

<https://prism.jpl.nasa.gov/>

https://hyspirci.jpl.nasa.gov/downloads/2018_Workshop/day1/10_HyspIRI_Airborne_Prep_DC_Workshop2018_McCubbin.pdf

Question 38: In this training, the water quality parameters observed was chlorophyll-a. Are these methods also applicable for other water quality parameters such as nitrate or phosphate?

Answer 38: Nitrate does not change water color, phosphate does. In the OCSSW toolbox in SeaDAS, there are many products that can be customized and utilized, such as L2gen.

Question 39: I have been stuck on Step 15 for a while as it seems to keep freezing during the process of creating the Land Mask. I have restarted a few times, and it keeps freezing there. Any suggestions?

Answer 39: You may not have enough processing power to create the Land Mask. Using the Crop tool could help with the process. Also, mosaicking a smaller area can also eliminate the need for cropping.