CREATING AN ENVIRONMENT -WINDOWS

ECOSTRESS TUTORIALS

This tutorial will show you how to create an Environment on Windows operating system.

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What is Miniconda?

Miniconda is a simple tool used to install and manage software packages and environments. It is a lightweight version of Anaconda, which includes many different packages in its installation. Miniconda, however, only comes with Conda and Python, making it easier to download. We will use Miniconda to install Mamba and create an environment to work with our ECOSTRESS data.

INSTALLING MINICONDA

1. There are many different package managers you can use to create an environment, so if you are more comfortable using another, you can do that. However, for this tutorial we are going to use **Miniconda** because it is a lighter version of the traditional Anaconda. Start by going to

https://docs.anaconda.com/miniconda/miniconda-install/ or searching the web for Installing Miniconda and clicking on the first link.



2. On the website, click on the link that says **Download the .exe installer**.



3. A new page should show up called **Latest Miniconda installer links**. Scroll down and **click the link** next to **Windows** to begin the download.

Lates	t Minic	onda installer links
This list of i older versic versions, se	installers is for ons of Python, ee <u>https://repo</u> Latest - (the latest release of Python: 3.12.7. For installers for see <u>Other installer links</u> . For an archive of Miniconda <u>o.anaconda.com/miniconda/</u> . Conda 24.9.2 Python 3.12.7 released Oct 23, 2024
Platform	Name	SHA256 hash
Windows	<u>Miniconda3</u> <u>Windows</u> <u>64-bit</u>	3a8897cc5d27236ade8659f0e119f3a3ccaad68a45de45bfdd310



4. Open your **File Explorer** and go to your **Downloads** folder. There should be a download starting with **Miniconda**. Double click on it to open it.



5. A Miniconda Setup window should appear. Click Next.

O Miniconda3 py312_24.9.2-0	64-bit) Setup	-		×
O ANACONDA.	Welcome to Minicond py312_24.9.2-0 (64-b Setup will guide you through the ins py312_24.9.2-0 (64-bit). It is recommended that you close al before starting Setup. This will make relevant system files without having computer. Click Next to continue.	a3 it) Setu tallation of I other appl e it possible g to reboot	J p Miniconda ications to update your	3
	N	lext >	Can	el

6. The next window will ask you to agree to the License Agreement. Click I Agree.





7. Next, select the installation type. You can leave this on Just Me and press Next.

O Miniconda3 py312_24.9.	2-0 (64-bit) Setup	_		×
O ANACONDA.	Select Installation Type Please select the type of installation y Miniconda3 py312_24.9.2-0 (64-bit).	you would like	e to perfo	rm for
Install for: Just Me (recommended All Users (requires admi) n privileges)			
Anaconda, Inc. ————	< Back	Next >	Can	cel

8. Next, you will need to select an **installation location**. It is best to leave the destination that they have recommended and just press **next**.

Miniconda3 py312_24.9.	2-0 (64-bit) Setup		_		×
O ANACONDA.	Choose Install Location Choose the folder in which to install (64-bit).	Minicond	da3 py3	312_24.9	.2-0
Setup will install Miniconda: different folder, click Brows	3 py312_24.9.2-0 (64-bit) in the follow se and select another folder. Click Next	ing folde t to conti	r. To in inue.	istall in a	
Destination Folder C:\Users\baumann\Ap	pData\Local\miniconda3		Brow	se)
Space required: 417.9 MB Space available: 838.1 GB Anaconda, Inc.	< Back	Next >		Can	cel

9. The next section is for **Advanced Installation Options**. You can leave the default options and select **Install**.





10. A green bar will appear showing the **progress** of the installation. Let it finish installing. Once it says **Installation Complete** you can click **Next**.

O Miniconda3 py312_24.9.	2-0 (64-bit) Setup	—		×
O ANACONDA.	Installation Complete Setup was completed successfully.			
Completed				
Show details				
Anaconda, Inc. ————	< Back	Next >	Cano	el

11. In the final window you can select **Finish**.

O Miniconda3 py312_24.9.2-0	(64-bit) Setup	_		\times
O ANACONDA.	Completing Minicond py312_24.9.2-0 (64- Thank you for installing Miniconda Here are some helpful tips and ret We recommend you bookmark the back to them later. Getting started with Conda	da3 bit) Setu sources to get ese links so you	I P you starte u can refer	d.
	< Back	Finish	Cancel	

What is Mamba?

Conda is a package management system used to install and manage software and it came with our Miniconda installation. Mamba is a new version of Conda that works even faster to manage environments. We will install Mamba so that we can easily create environments for different projects.



INSTALLING MAMBA

1. Find your **Start Menu**, which is the **search box** at the bottom of your screen next to the **Windows logo**.



2. In the **Start Menu** search for **Anaconda Prompt** and click on the application to open it.

America Discont		C:\
Search the web		Anaconda Prompt
Q anaconda prompt - See more search results	>	Арр
Q anaconda prompt/cmd	>	C Open
Q anaconda prompt download	>	 Run as administrator Run as different user
Q anaconda prompt anaconda 3	>	Open file location
Q anaconda prompt 3	>	
Q anaconda prompt python	>	Uninstall

3. Now that we have the command prompt open, we need to install mamba. To do this, type **conda install -c conda-forge mamba** into the terminal and press **Enter** to run it.



4. Let the command run for a bit. Eventually it will ask you to **Proceed ([y]/n)?** Type **y** into the terminal and **Enter** to run it.





5. You will know it is done installing when you get the message **Executing transaction: done**. You now have mamba installed on your computer.



What is an Environment?

An environment is a separate place on your computer where you can install software and libraries specific to the project you are working on. This allows you to have multiple projects all with their unique requirements. We need to create an environment that has all the tools we need to work with ECOSTRESS data.

CREATING AN ENVIRONMENT

- In the Anaconda Prompt type the command mamba create -y -n ECOSTRESS -c conda-forge python=3.11 jupyter rioxarray hvplot and run it. Here is an explanation of each part of the command:
 - a. mamba create is the command to make the environment.
 - b. -y confirms changes being made.
 - c. **-n ECOSTRESS** is used to name our environment. In this case the environment is being named ECOSTRESS but if you would like a different name, you can change it. Just make sure to keep the **-n** and not use spaces or special characters in your name.
 - d. -c conda-forge sets the channel where mamba will pull the packages from.
 - e. For the end of the command, we list all of the **packages** we want. Here is a description of each one we will use in our tutorial:
 - i. **python=3.12** connects to python, in this case setting it to version 3.12.
 - ii. jupyter allows us to use jupyter notebooks.
 - iii. rioxarray lets us open rasters.
 - iv. hvplot will allow us to create maps.





2. Let the command run. You will know it is **done** when you get these instructions on how to **activate** and **deactivate** the environment.



3. Finally, lets activate our environment by typing in **mamba activate ECOSTRESS** and running it.



4. You will know that your new environment has been activated when you see the environment name, in this case ECOSTRESS, in parentheses before your line of code instead of (base).



Now you have an environment set up to run your code with!

