

# Introduction to Geospatial Raster and Vector Data with Python

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netherlands  
**eScience center**

# Contributors



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# The Lesson

- **Data Carpentry** lesson, part of **The Carpentries Incubator**.
- **Hands-on** practice, code-along format, specific tools & problems.
- "Forked" from the R-based geospatial curriculum.
- Objective: Help learners to familiarize with **Python geo-spatial ecosystem**.
- Target audience: **students and researchers** with exposure to Python.

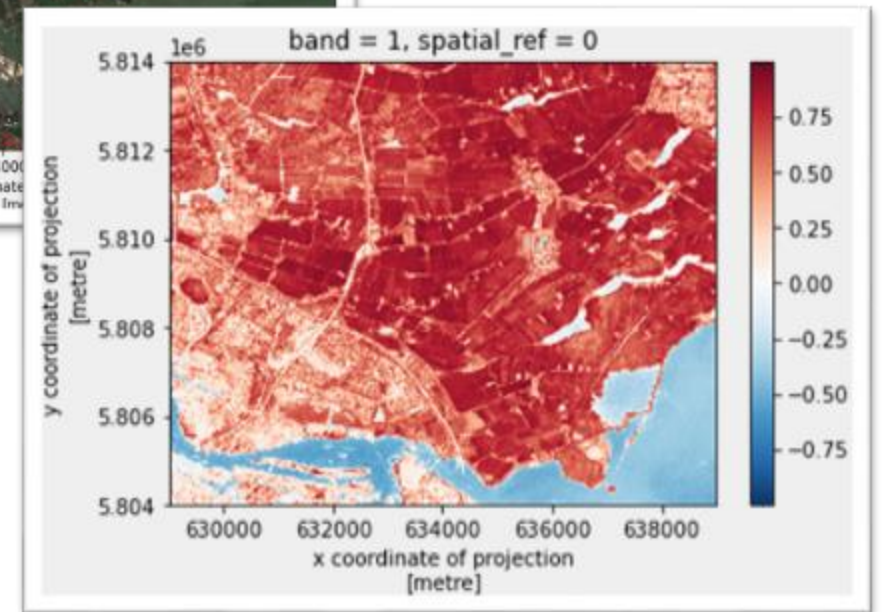
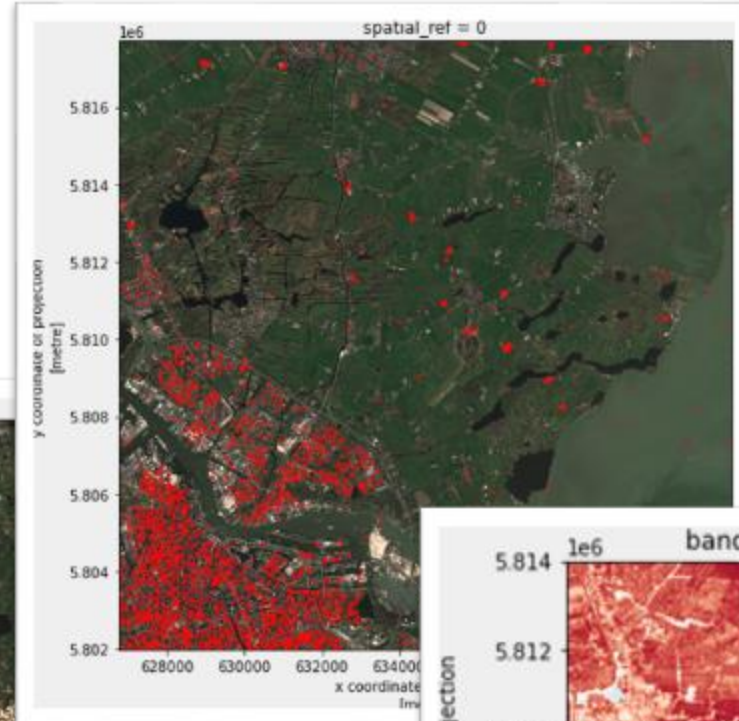
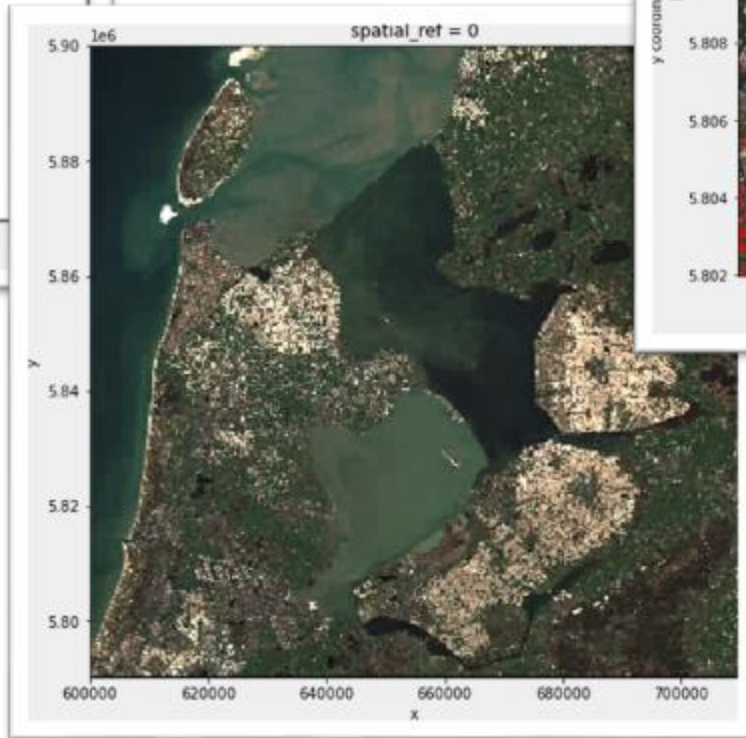
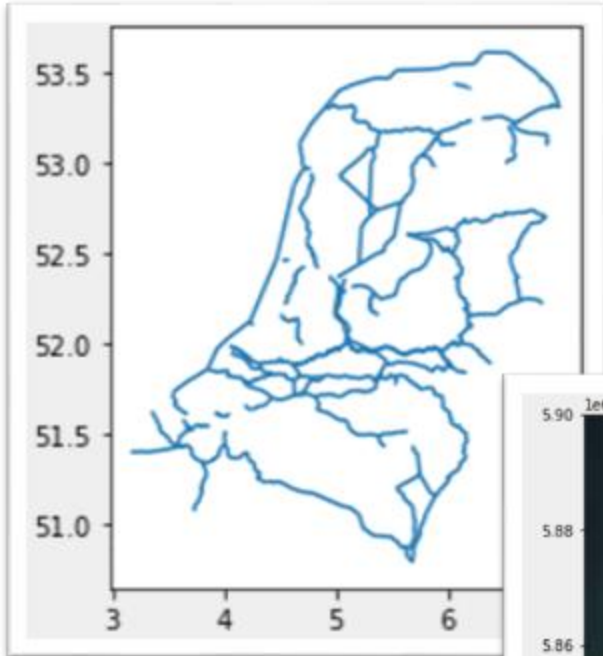


# The Curriculum

- Introduction to geospatial concepts.
- Access satellite imagery.
- Read and visualize raster data.
- Vector data.
- Data manipulations and calculations.
- Parallel raster computations.



# The Datasets



- Raster: Optical satellite images (Sentinel-2).
- Vector: public geo-datasets from PDOK.



# The Lesson Development

- The user community:
  - **Instructors:** The Carpentries, researchers/technicians/support staff.
  - **Learners:** students/researchers with Earth or Space science background, novice at Python.
- Development Plans:
  - Looking for pilots and feedback to move from *beta* to *stable*!
  - New content: point clouds, advanced visualizations (interactive plots, maps), big geo-data.





<https://carpentries-incubator.github.io/geospatial-python/>

The screenshot shows the top part of the lesson page. At the top is a navigation bar with links: Home, Code of Conduct, Setup, Episodes, Extras, License, and Improve this page. A search bar is on the right. Below the navigation is a blue banner with the text: "This lesson is part of The Carpentries Incubator, a place to share and use each other's Carpentries-style lessons. This lesson has not been reviewed by and is not endorsed by The Carpentries." The main heading is "Introduction to Geospatial Raster and Vector Data with Python". Below the heading is a paragraph: "Data Carpentry's aim is to teach researchers basic concepts, skills, and tools for working with data so that they can get more done in less time, and with less pain." A section titled "Getting Started" follows, with a paragraph: "Data Carpentry's teaching is hands-on, so participants are encouraged to use their own computers to ensure the proper setup of tools for an efficient workflow. To most effectively use these materials, please make sure to download the data and install everything before working through this lesson."



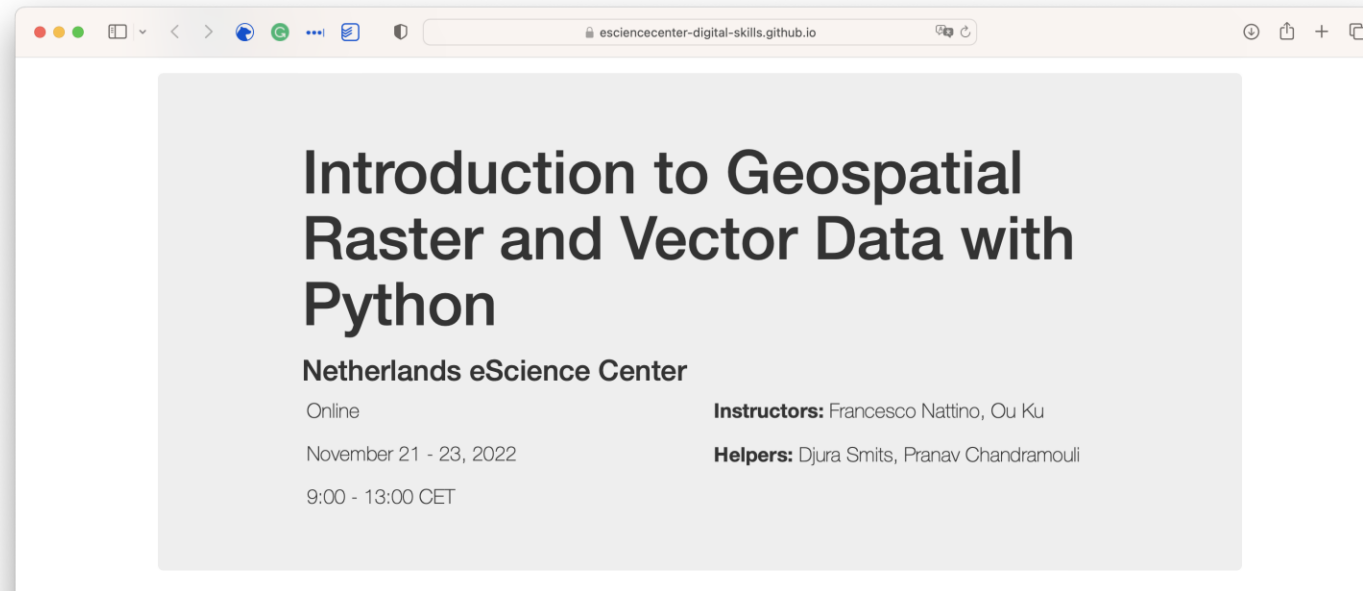
[carpentries-incubator/geospatial-python](https://github.com/carpentries-incubator/geospatial-python)

The screenshot shows the GitHub repository page for "carpentries-incubator/geospatial-python". The repository is public and has 41 forks and 100 stars. The main branch is "gh-pages" with 8 branches and 18 tags. The repository description is "Introduction to Geospatial Raster and Vector Data with Python". The repository tags include "python", "education", "geospatial-data", "english", "lesson", "pre-alpha", and "carpentries". A recent pull request by "rbavery" is visible, titled "Merge pull request #124 from carpentries-incubator/unpin-pystac...", with 1,094 commits and a checkmark indicating it is merged. The file list shows ".github" (updated 4 years ago) and "\_episodes" (updated 16 days ago).



# Workshops

Upcoming workshop: **21-23 November, Online.**



<https://esciencecenter-digital-skills.github.io/2022-11-21-dc-geospatial>





# Let's stay in touch

Checkout upcoming workshops and  
signup for the newsletter!



<http://www.esciencecenter.nl/digital-skills>



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