Environmental Data Training 2022

XI SIMBIOMA - Slowing down the Anthropocene: challenges and possibilities in the Atlantic Forest

Part 01
Environmental Data Analysis Steps

Part 02 - More tools and deeper thoughts

Environmental Data Training
2022 - XI Simbioma

Part 01 Environmental Data Analysis Steps

1. **Ask**
   Environm. Data Basics/Resources
2. **Prepare**
   Database, Dataset and Software
3. **Clean**
   Dataset Setup, Clean and LOG
4. **Process**
   Data collection and selection
5. **Analyse**
   Hypothesis and tools
6. **Share**
   Present and show
7. **Act**
   Data-driven

Part 01 Environmental Data Analysis Steps

Step 1 - Ask

Environmental Data Basics and Resources

- ○ Sources and relations
- ○ Time, deadline
- ○ Expectation / Objectives
- ○ Resources for environmental information
- ○ Resources for raw data

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Part 01 Environmental Data Analysis Steps

Step 2 - Prepare

Database, Dataset and Software

- ○ Database understanding and structure
- ○ Dataset definition
- ○ Software
- ○ Relationship over data, time and space
- ○ SpreadSheet - Excel/Google
- ○ R-CRAN/R-Studio - Libraries
- ○ Structured Query Language (SQL)
- ○ Geography Information System (GIS) database

Part 01 Environmental Data Analysis Steps

Step 3 - Clean

Dataset Setup, Clean and LOG

- ○ Visual validation
- ○ Registering changes, sources and assumptions (LOG)
- ○ Fields, Keys, conventions (Tidy-R)
- ○ Data validation
- ○ Qgis - Plugins, processing, add-ons, python
- ○ Spatial data validation (topology check)

Part 01 Environmental Data Analysis Steps

Step 4 - Process

Data collection and selection

- ○ Business Problem, objectives and target needs
- ○ Expected steps and duration
- ○ Data type, volume and timeframe
- ○ Filtering data (Spreadsheet, R-studio, SQL)
- ○ Data group, parts and cross relation
- ○ Summary and report

Part 01 Environmental Data Analysis Steps

Step 5 - Analyse

Hypothesis and tools

- Initial hypothesis, problem definition
- Graphs and charts for a start
- Maps and tests to keep track
- Description and explanation

Part 01 Environmental Data Analysis Steps

Step 6 - Share

Present and Show

- Analysis and pictures/images
- Presenting results
- Positioning, Slide usage, information transmission
- 5 second rule
- Highlight, focus and importance scaling
- Dashboard, Business Intelligence
- Update window

Part 01 Environmental Data Analysis Steps

Step 7 - Act

Data-driven decisions

- ○ Conclusions
- ○ Proposals
- ○ Listen and amplify
- ○ Correct and enhance

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