Introducing LearnEO!

and resources available from

www.learn-eo.org

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with

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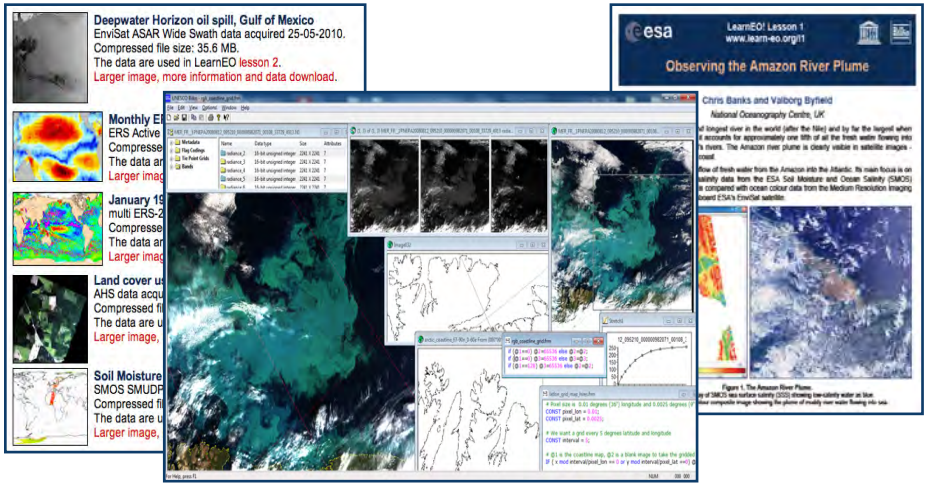
LearnEO!

A new initiative in Earth observation education

Aims

- Develop new peer-reviewed on-line learning resources for Earth observation education
  - Data sets, lessons, software tools, background information
- Stimulate and support participation from the Earth sciences and education communities to develop and share new education resources.



LearnEO!

Target audience

Students in formal education

- University level
  - Undergraduate to post graduate
- High school (16-18)
  - Data and short case studies

Continuous professional development

- Short training courses (1-3 weeks)
- Self study

Non-EO environmental scientists

- Occasional users of EO data
  - Some understanding of remote sensing, but not EO specialists

Teachers, lecturers, course organisers

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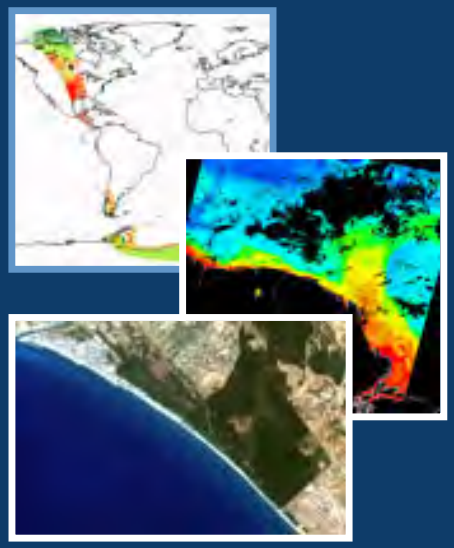
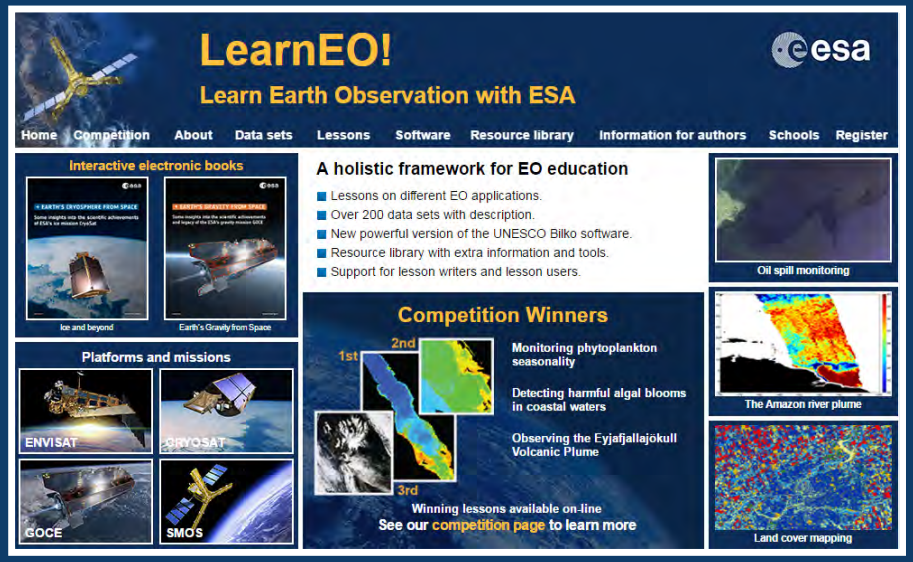
Overview of resources at www.learn-eo.org

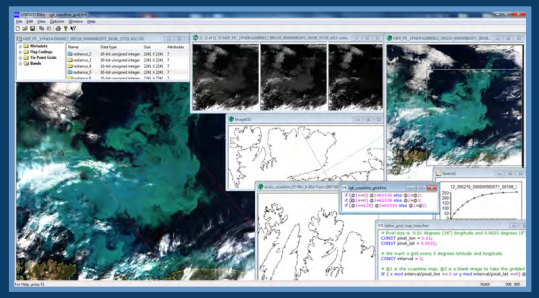


Data collection

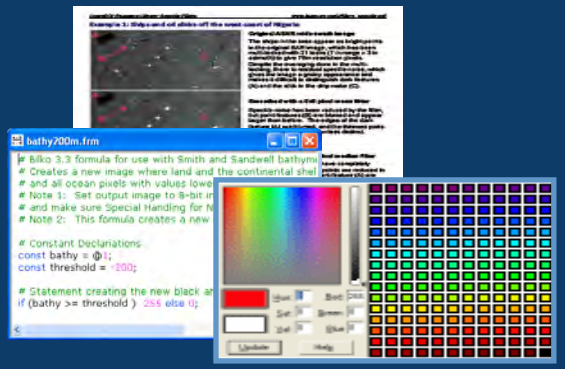


LearnEO! Home

New lessons



Bilko software / tutorial



Resource library

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Data set collection

Finding data

- By keyword search, Google map or selective browse tool

Individual data information

- Preview image with description
- Sensor, mission, aquisition date
- Where and how to obtain similar data

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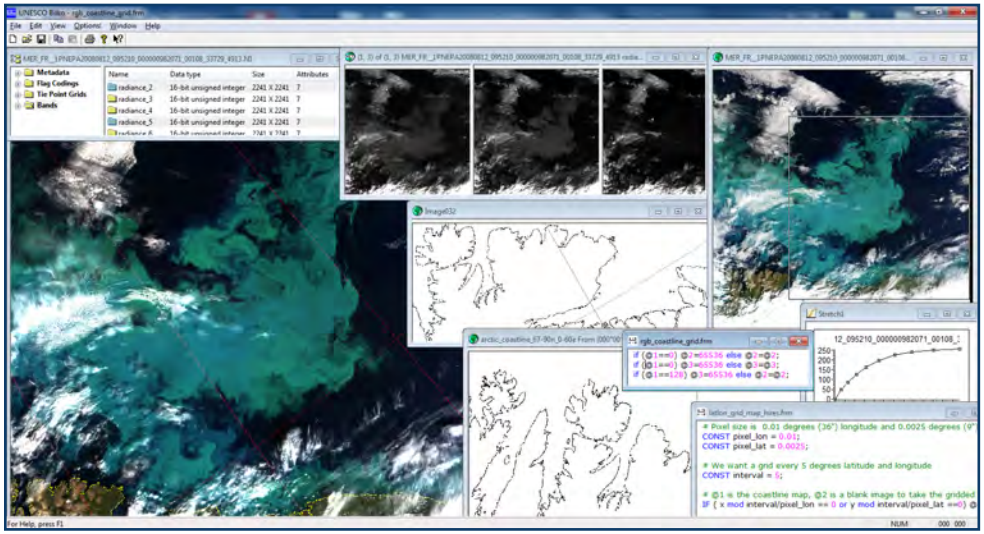
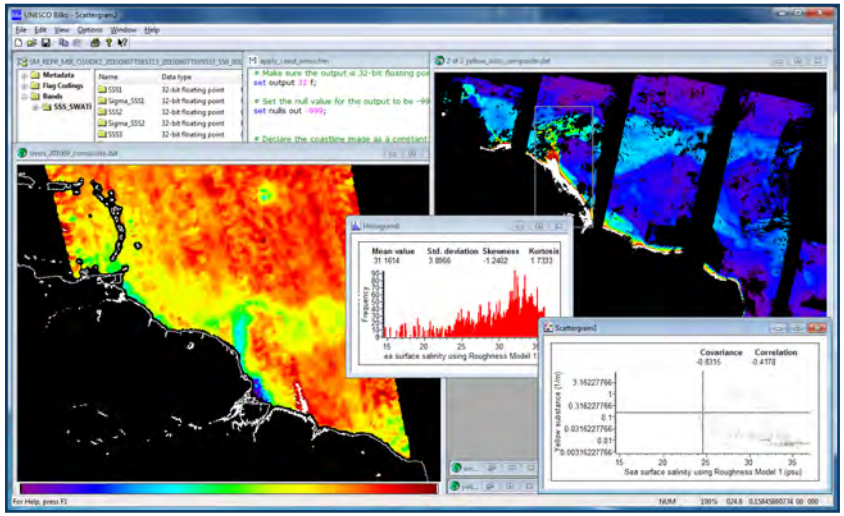
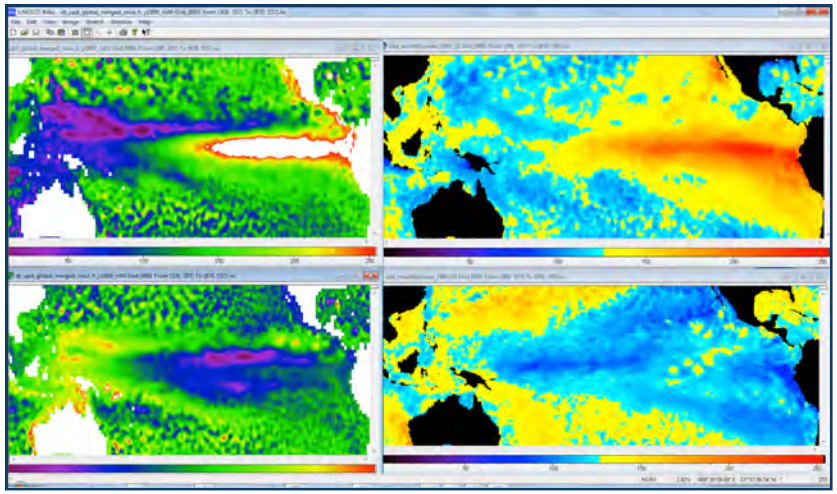
Bilko software

UNESCO software – started 1987

- Updated to support a wider range of data
- New and improved image display and analysis tools
- Free – depends on volunteer effort
- Relies on volunteers for testing!







LearnEO!

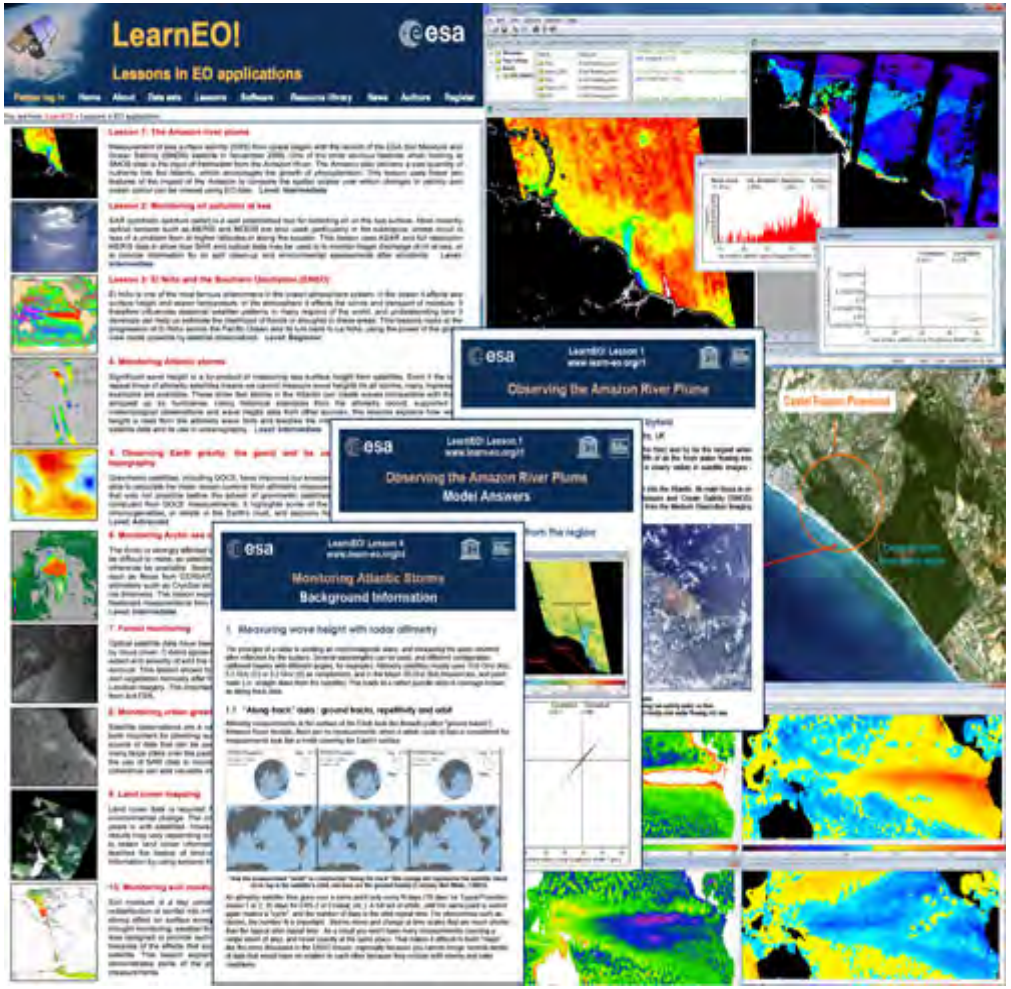
Hands-on lessons in different EO applications

Self contained

- All material required to complete the lesson are provided as downloads

Lesson content

- Hands on activities
  - Brief introductory information
  - Step by step instructions
  - Questions to guide understanding
- Model answers
  - Explaining the reasoning behind suggested answers
- Background information
  - More detail on topics introduced in activities
- Example data, analysis/display tools



Phenology indices and their importance for coral reef biology

By Marie-Fanny Racault and Dionysios E. Raitsos

Plymouth Marine Laboratory, U.K.

1st Prize in the LearnEO! Lesson Writing Competition 2013/14

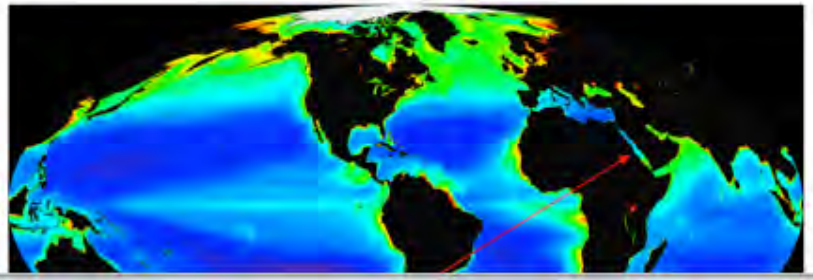
Being the base of the marine food-web, phytoplankton provides a source of food for the larvae of many coral reef species, including fish, crustaceans and mollusks. The bloom timing (phenology), along with the intensity of phytoplankton availability is determinant for the larvae survival.

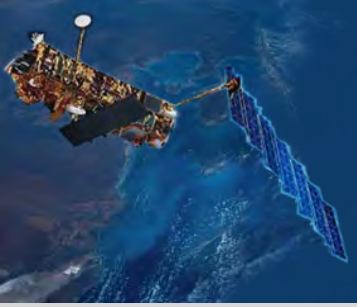
This lesson introduces phenology metrics relevant to monitor the seasonality of phytoplankton using remote sensing ocean colour data from the European Space Agency (ESA) Climate Change Initiative project (OC-CCI). It investigates the phytoplankton dynamics in major coral reefs of the Red Sea, which is one of the most saline and warm seas in the world.

Suitable for university students or continued professional development training (intermediate level).

The research that forms the basis of this lesson is published in: Racault, M.-F., et al. (2015): Phytoplankton phenology indices in coral reef ecosystems: Application to ocean-color observations in the Red Sea, Remote Sensing of Environment. http://dx.doi.org/10.1016/j.rse.2015.01.019

IMPORTANT NOTE: This lesson requires Bilko 3.4 from February 2013 or later, as earlier versions of the software can not open and display all data as described in the lesson.





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Other lessons available from LearnEO!

- Ten lessons developed in LearnEO! for Bilko software
- Three lessons from the winners of the LearnEO! lesson writing competition – also for Bilko
- Ten lessons from the Global Lakes Sentinel Services (GLASS) for either BEAM or SNAP software

Available at

http://www.learn-eo.org/lessons.php