

# EU BON

## Remote Sensing Challenges

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Crete Meeting, 2014

# Outline

Remote Sensing

Open Source Tools

How RS may be of use

Contacts

EU BON  
Remote Sensing  
Challenges

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Contacts

## Remote Sensing

## Image classification

- ▶ spectral unmixing
- ▶ random forest



Image from the ISS - Luca  
Parmitano - ESA - 2013

# Major questions

1. How remote sensing is working for EU BON (main tasks like 3.1, discussing the recent deliverable)
2. What remote sensing could do for EU BON as an ancillary variable for species distribution modelling and biodiversity estimate
3. List of platform to download RS data (this will be a common point with other cross-task meetings)

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use

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How RS may be of  
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Contacts

# Free and Open Source Software

FOSS!

**Trends in**  
**Ecology & Evolution**

Letter

**Cell**  
PRESS

## Let the four freedoms paradigm apply to ecology

**Duccio Rocchini and Markus Neteler**

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In our view, the explicit use of Free and Open Source Software (FOSS) with **availability of the code** is essential for **completely open science**: 'scientific communication relies on evidence that cannot be entirely included in publications', but '**anything less than the release of source programs is intolerable for results that depend on computation**' [3].

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Remote Sensing  
Challenges

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Remote Sensing

Open Source Tools

How RS may be of  
use

Contacts

# Remote sensing data for Europe SDMs

## Basic steps

- ▶ script development for data gathering



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Remote Sensing  
Challenges

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Remote Sensing

Open Source Tools

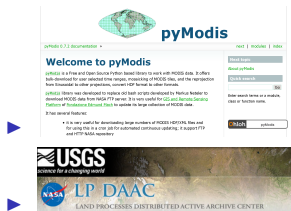
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use

Contacts

## Remote sensing data for Europe SDMs

## Basic steps

- ▶ script development for data gathering
- ▶ connection to NASA DB and data gathering



# Remote sensing data for Europe SDMs

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Remote Sensing  
Challenges

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Remote Sensing

Open Source Tools

How RS may be of  
use

Contacts

## Basic steps

- ▶ script development for data gathering
- ▶ connection to NASA DB and data gathering
- ▶ reproject data by MODIS Reprojection Tool



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Remote Sensing

Open Source Tools

How RS may be of use

Contacts

EU BON  
Remote Sensing  
Challenges

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Remote Sensing

Open Source Tools

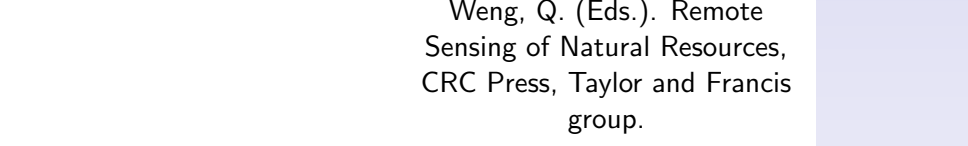
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use

Contacts

## Remote Sensing

Image classification

- ▶ The role of hyperspectral remote sensing in invasion research
    - ▶ Images processing and classification algorithms
    - ▶ The advantages of incorporating phenology in invasion research
- 
- He, K.S., Rocchini, D., 2013. Plant Invasion and Imaging Spectroscopy. In: Wang, G., et al., eds. 'Remote Sensing of Natural Resources'.



Duccio Rocchini (Fondazione E. Mach) EU BON Remote Sensing Challenges Meeting 9 / 11

# Outline

Remote Sensing

Open Source Tools

How RS may be of use

Contacts

EU BON  
Remote Sensing  
Challenges

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Remote Sensing

Open Source Tools

How RS may be of  
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Remote Sensing

Open Source Tools

How RS may be of  
use

Contacts