

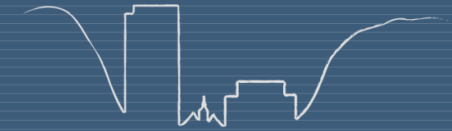
MySeasons

Community-based mapping and monitoring of vegetation phenology

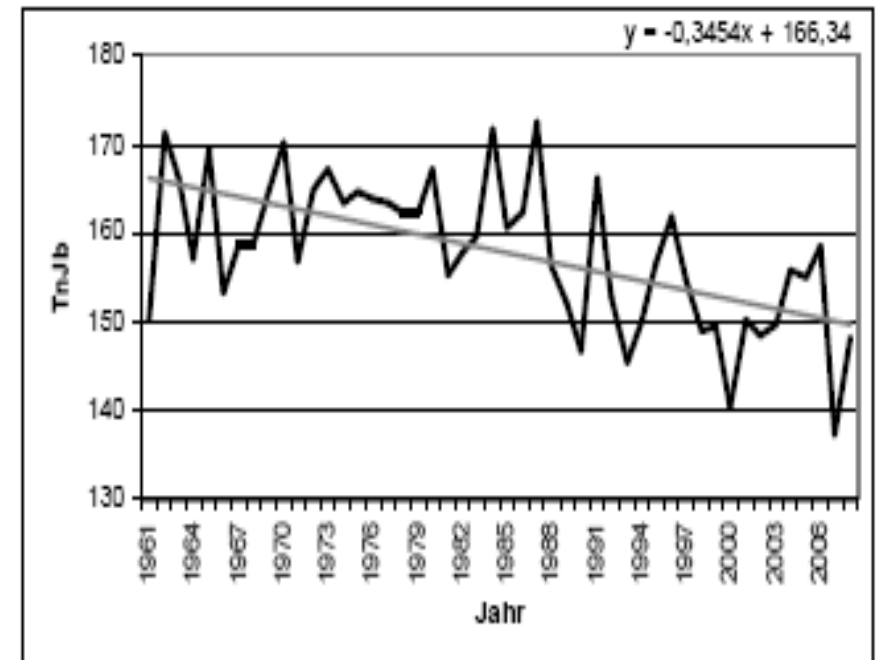
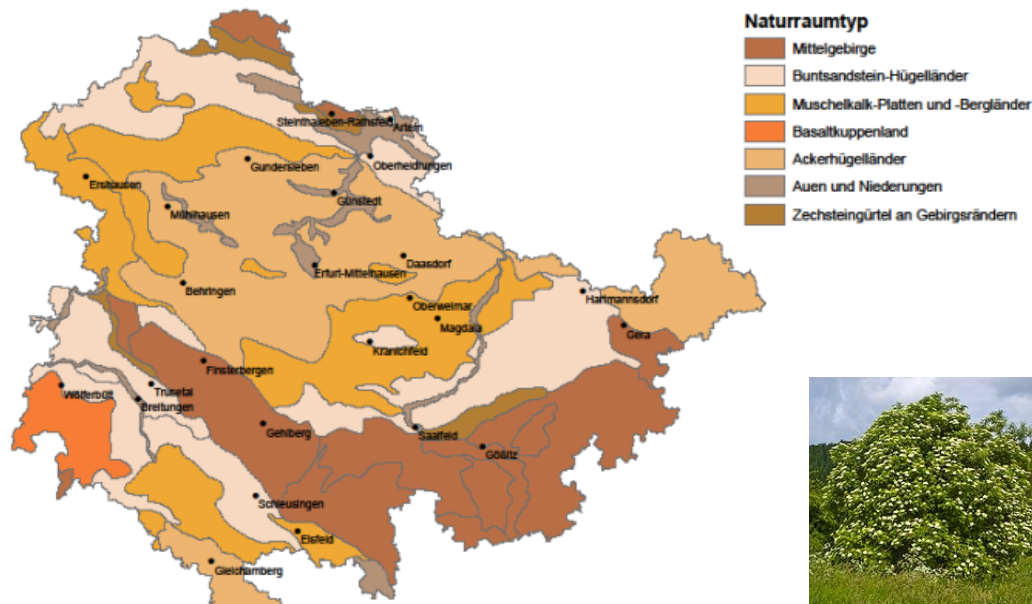
Jonas Eberle, Christian Hüttich, Christiane Schmullius

Friedrich Schiller University Jena



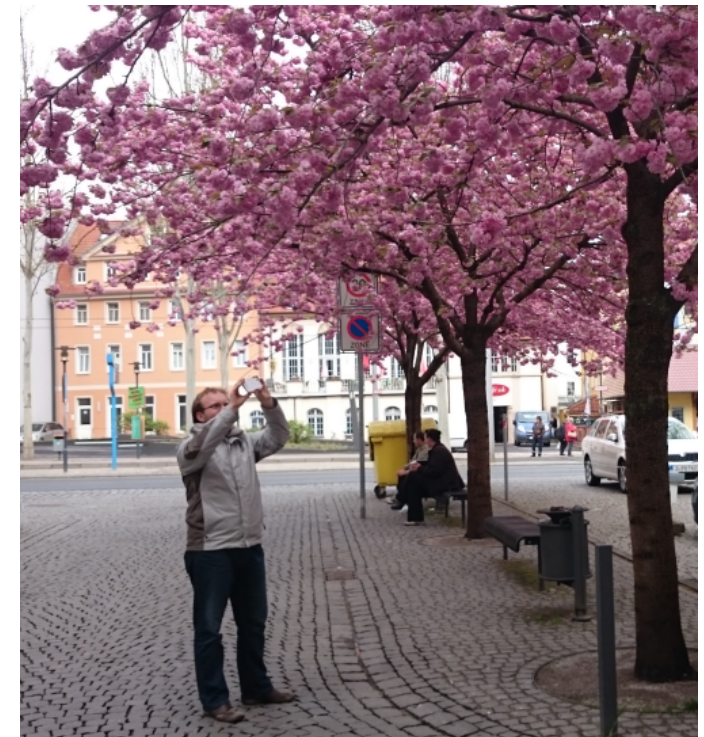
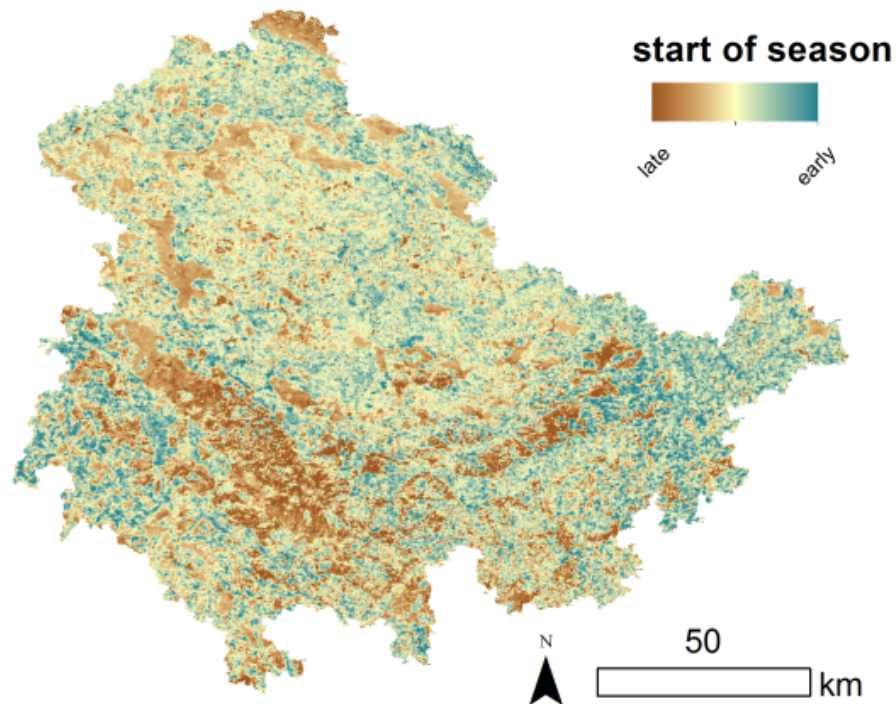


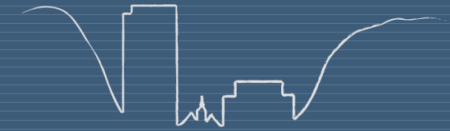
Why is vegetation phenology important?



In-situ phenology observations detect long-term vegetation seasonal shifts! – But station data are limited!

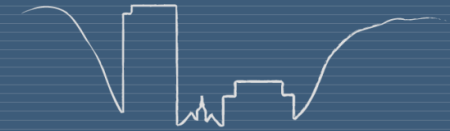
Connecting citizen observers with EO services





Limited terrestrial phenology observations

- need for frequent update!
- Use the potential of crowd sourcing
- Connect citizen phenology observers with Earth observation data & products
- Support activities of increasing citizen observation networks (e.g. German Weather Service - DWD)

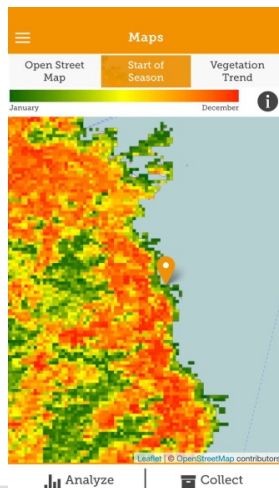


From EO data to phenology information

- Easy to use vegetation phenology analysis with mobile devices
- Data collection by citizens to identify start and end of vegetation seasons

Analyse

Interactive map to show phenology datasets



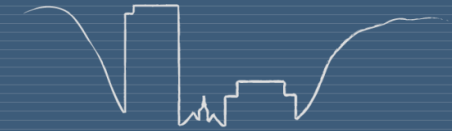
Timeline charts of start & end of season



Collect

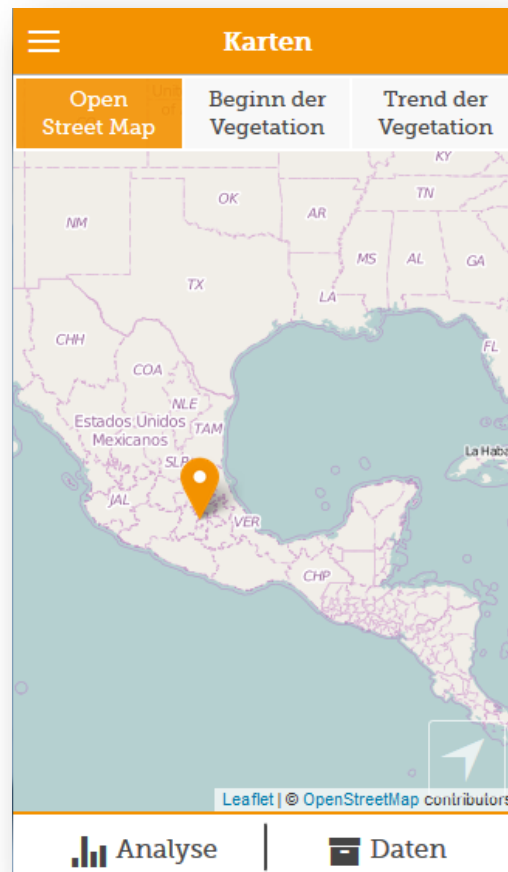
Collection of in-situ phenology information



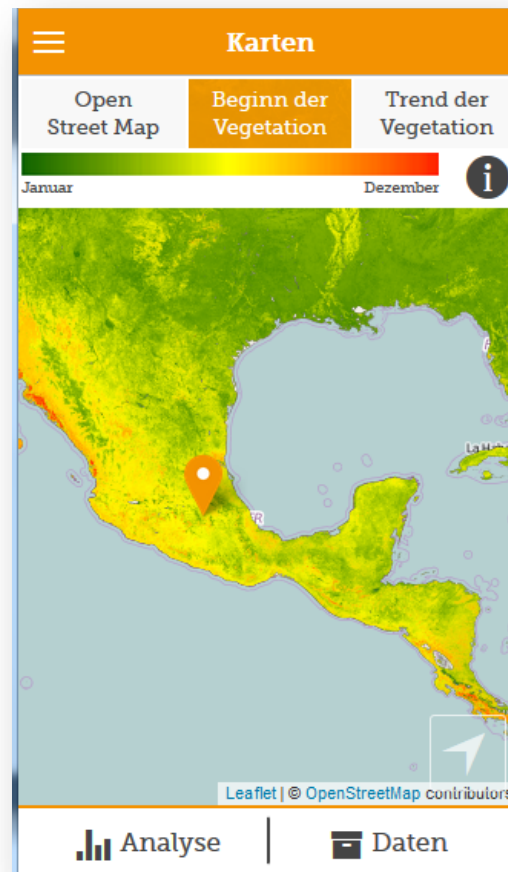


Maps

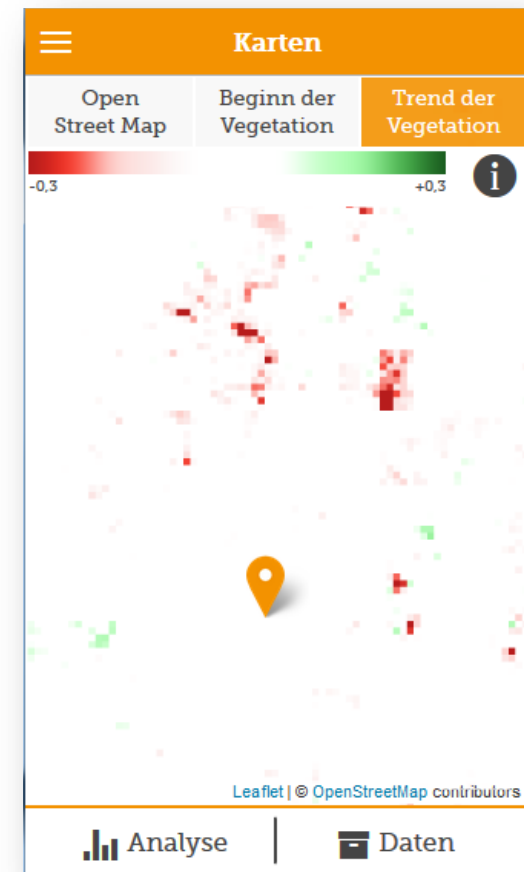
Open Street Map



Start of Season

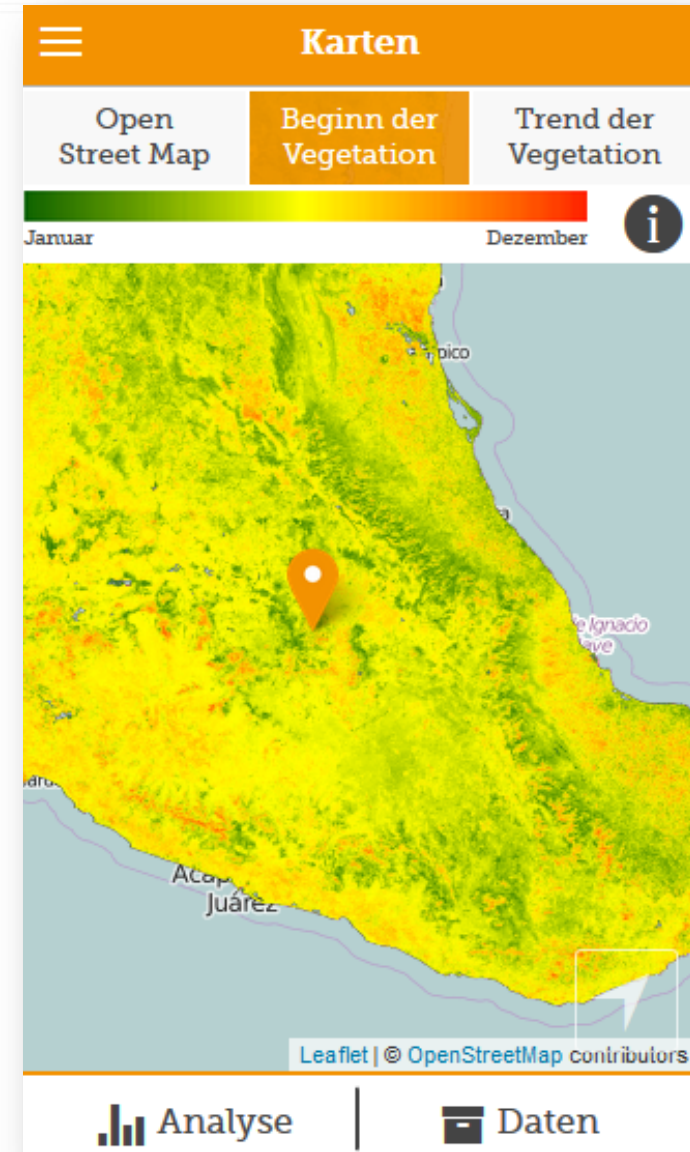


Vegetation Trend



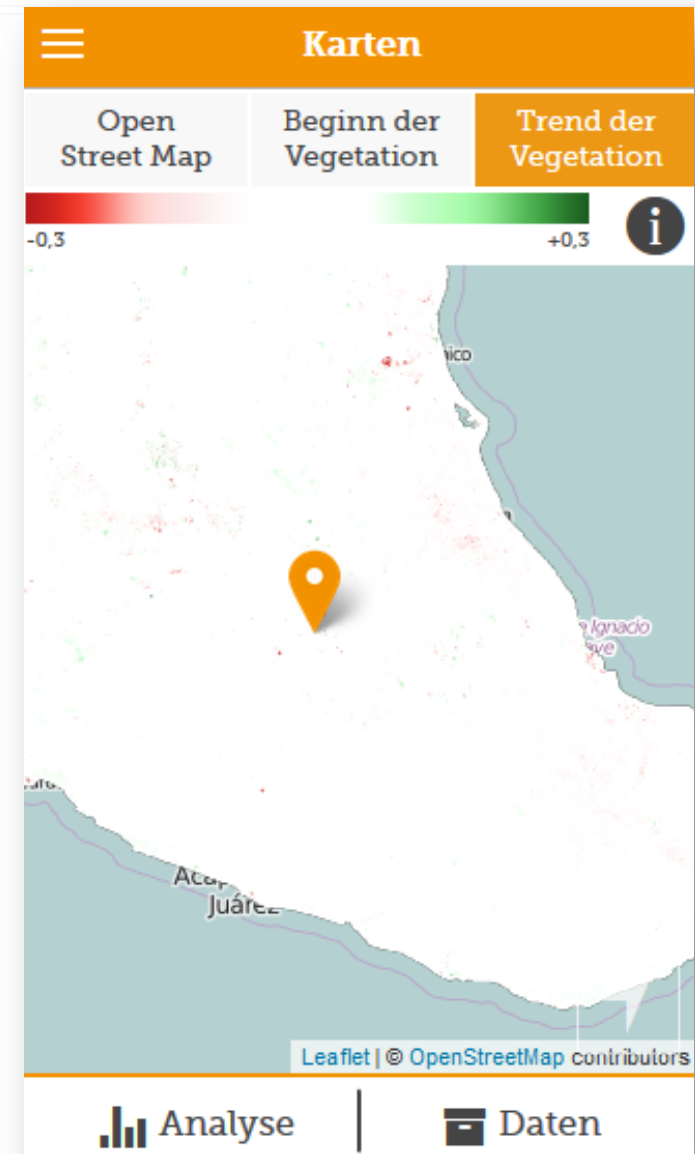
Maps: Start of season layer

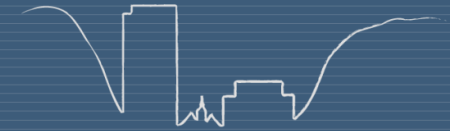
- Based on NASA MODIS Land Cover Dynamics Yearly Global 500 m dataset (MCD12Q2)
- Shows mean start of vegetation period (2000 - 2014)
- Indicates large scale phenological characteristics on plant community level



Maps: Vegetation trend layer

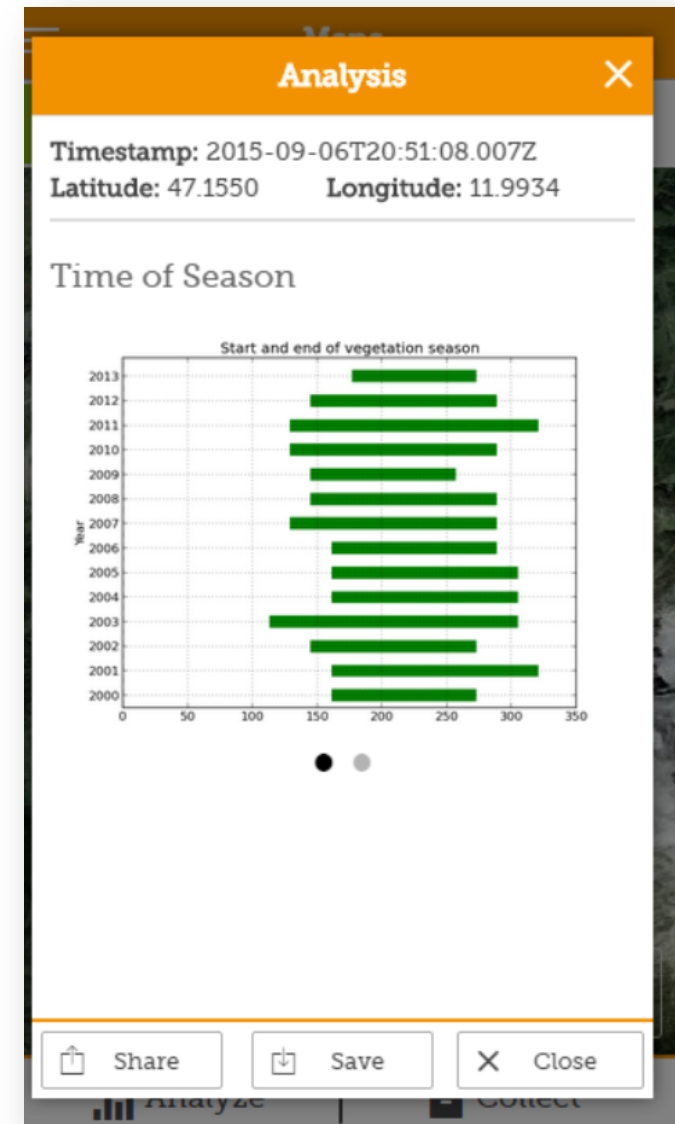
- Based on NASA MODIS 250 m EVI dataset (MCD13Q1)
- Shows linear increase or decrease in vegetation activity (2000 - 2014)
- Indicates long-term changes
 - Phenological shifts
 - Land cover & use change





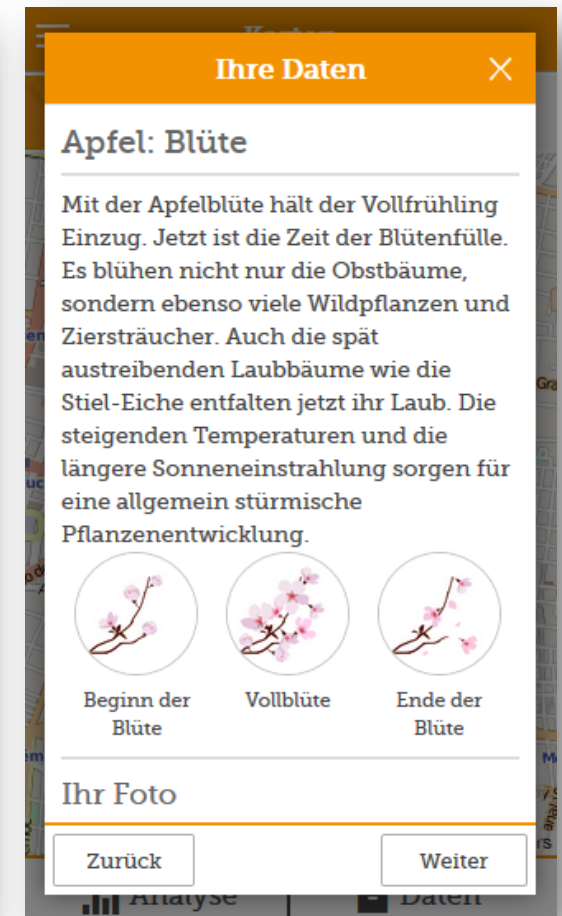
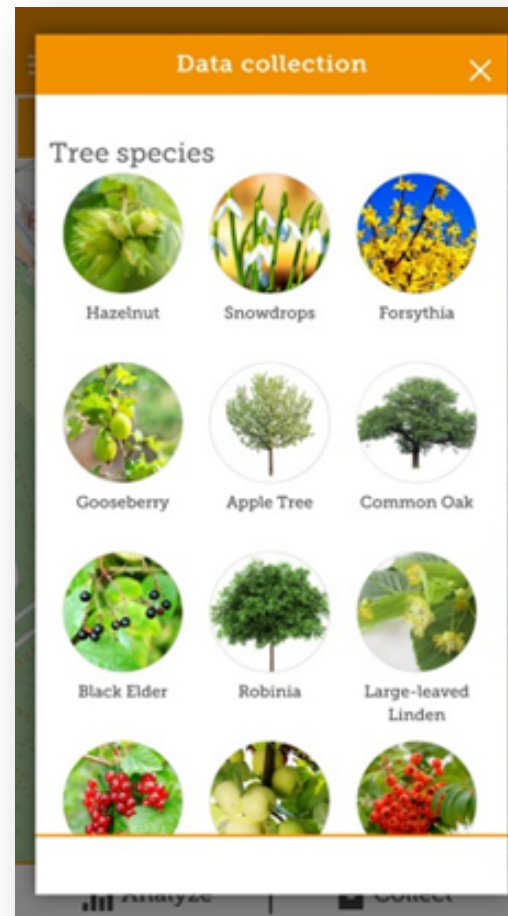
Analyses: Time line chart

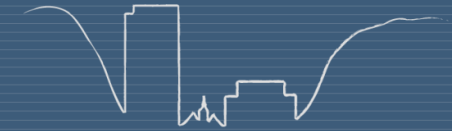
- On demand processing based on the current GPS position
- Temporal dynamics of vegetation phenology
- A dynamic generated chart shows changes of phenological phases (start of season) of previous years



Data collection by citizens

- User interaction
- Collect data (e.g., state of bloom of specific trees) to define phenological parameters (e.g., start and end of season)
- Compare own collected data with measurements from the satellite over the past 15 years





Citizen observations database

The screenshot shows the 'myseasons.eu/database/' website. The browser address bar displays the URL. The website has a navigation menu with links: HOME, ABOUT, FUNDING, CONTACT, and DATABASE. A search bar with the placeholder 'Suchen' is also present. The main heading is 'Database'. Below this, a note states: 'Please note: The database on this website will be updated once a day.' A table displays a single observation for a 'Common Oak' (ID 51, Date 2015-11-06 08:40:30.267582, Location 50.9233, 11.5824). The observation details include: Leaf discoloring: Yes (Image), Defoliation: Yes, Leaf development: No, and Fruit maturity: No. To the right, there is a section titled 'GET MYSEASONS APP FOR FREE' with links to the App Store and Google Play. The footer contains the European Union flag and text indicating funding from the MyGEOSS project.


myseasons.eu/database/

HOME ABOUT FUNDING CONTACT DATABASE

Database

HOME »


Please note: The database on this website will be updated once a day.

Tree species	ID	Date	Location (Lat/Lng)
 Common Oak	51	2015-11-06 08:40:30.267582	<u>50.9233, 11.5824</u>


- Leaf discoloring: Yes ([Image](#))
- Defoliation: Yes
- Leaf development: No
- Fruit maturity: No


GET MYSEASONS APP FOR FREE

MySeasons is available for your iOS-device on Apple's App Store:

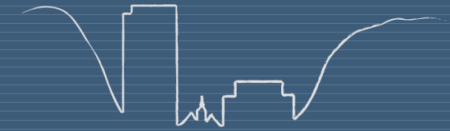
 AppStore

For your Android-device check out MySeasons on Google Play Store:

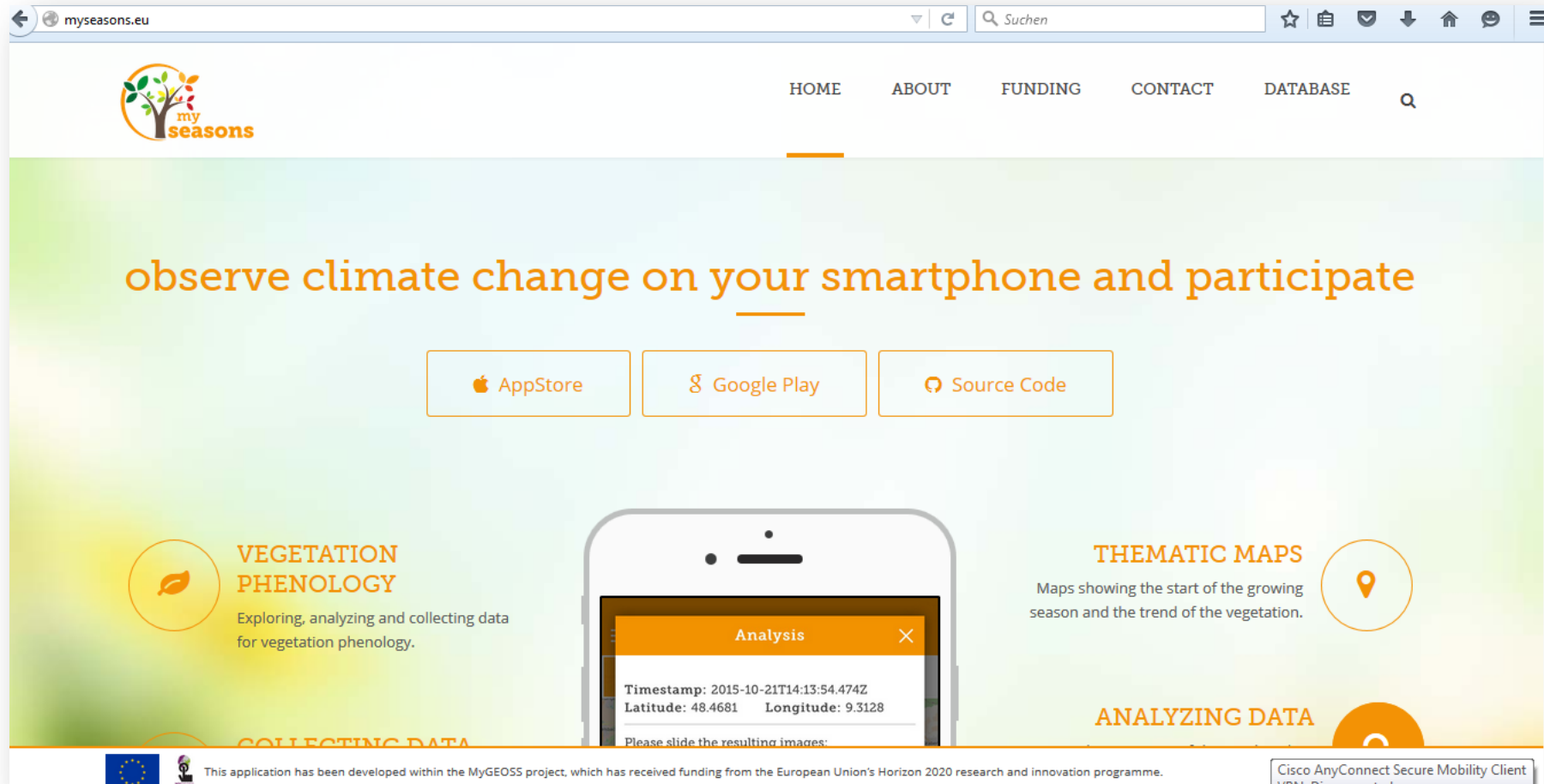
 Google Play

 This application has been developed within the MyGEOSS project, which has received funding from the European Union's Horizon 2020 research and innovation programme.

<http://myseasons.eu/database/>



MySeasons download & further information



<http://myseasons.eu/>