

ICOS

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INTEGRATED
CARBON
OBSERVATION
SYSTEM

**A EUROPEAN RESEARCH
INFRASTRUCTURE**

**ICOS Belgian Consortium
Study Day**

www.icos-ri.eu

Integrated Carbon Observation System

Network of research stations measuring greenhouse gas exchange on the long term (20 years)

- Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O)
- Environmental variables and meteorological data



Ecosystems

Atmosphere

Oceans

Belgian consortium



- University of Antwerp (*focal point*)
- Hasselt University
- Research Institute for Nature & Forestry, INBO
- Flanders Marine Institute, VLIZ
- Université de Liège-Gembloux
- Université Catholique de Louvain
- Institut Scientifique de Service Public
- Belgian Institute for Space Aeronomy
- KBIN / IRSN

Stakeholders & funding organisations

- Government of Flanders
 - Dept. Economy, Science & Innovation (EWI)
 - Flemish Hercules Foundation (>1.2 M€ annually; since 2013)
- Communauté Française / Région Wallonne
 - Service Public de Wallonie – DG Economie, Emploi & Recherche (3.9 M€ for 8 years)
- Federal level
 - Belgian Science Policy Office (BELSPO)
Martine Vanderstraeten, vice-chair of ISIC



Links with other ESFRI's

- LifeWatch: VLIZ; Hasselt University; INBO



- ANAEE: University of Antwerp; Hasselt University



National Geographic – Behind the Science (2013)

- ICOS towers
 - ICOS Ecosystem Thematic Centre
1. Down-loadable www.uantwerpen.be
 2. <http://natgeotv.com/nl/behind-the-science>
 3. <http://behindthescience.uantwerpen.be/> *and then choose English*



National website

www.icos-belgium.be



The screenshot shows the homepage of the ICOS-Belgium website. At the top, there is a header with the ICOS logo and the text "integrated carbon observation system". To the right of the logo is a graphic showing a globe with arrows and chemical formulas for greenhouse gases: CO_2 , CH_4 , N_2O , and SF_6 . Below the header is a navigation menu with the following items: Home, Organisation, ICOS-Belgium infrastructure, ETC, Outreach, Meetings, Partners + funding, News, Links, and Contact. The main content area features a large photograph of a tall, lattice-structured tower (a micrometeorological tower) surrounded by trees. Below the photograph, the text reads "Welcome to ICOS-Belgium!" followed by a section titled "ICOS" which describes the system as a European Research Infrastructure (ESFRI) for quantifying and understanding the greenhouse gas balance of the European continent and of adjacent regions. The mission of ICOS is listed as follows:

ICOS

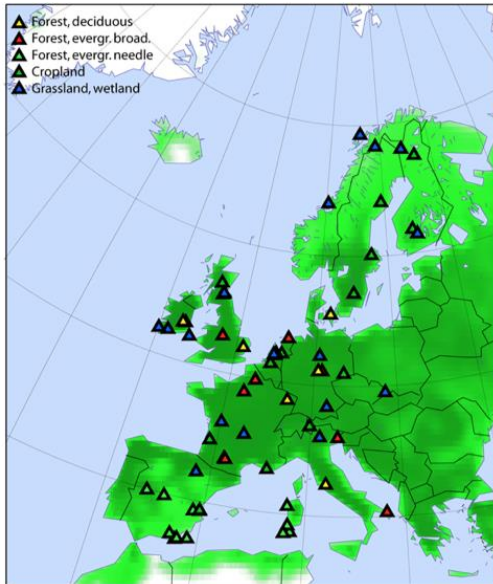
ICOS (Integrated Carbon Observation System) is a European Research Infrastructure (ESFRI) for quantifying and understanding the greenhouse gas balance of the European continent and of adjacent regions.

The mission of ICOS is:

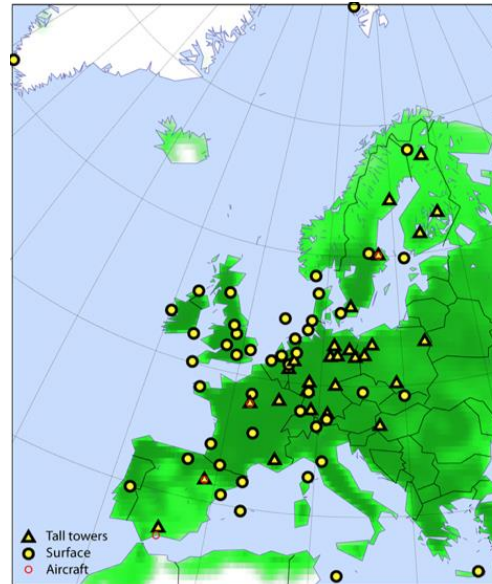
- To provide the long-term atmospheric and flux observations required to understand the present state and predict the future behaviour of the global carbon cycle and greenhouse gas emissions.
- To monitor and assess the effectiveness of carbon sequestration and/or greenhouse gas emission

3 observation networks – 3 thematic centres

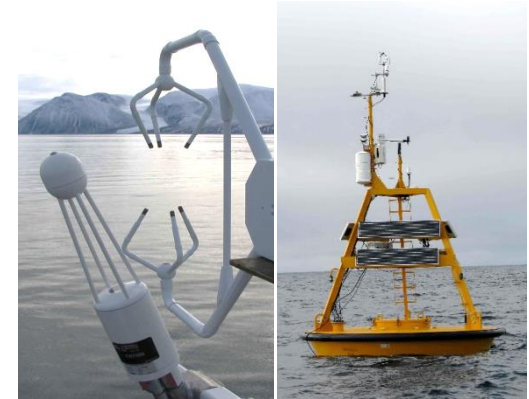
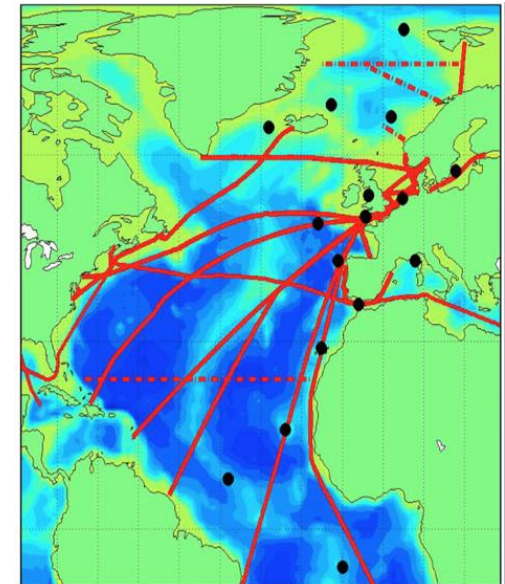
ECOSYSTEM NETWORK



ATMOSPHERE NETWORK



OCEAN NETWORK



7 ICOS research stations in Belgium



Overview of stations



Station Name	Station Type	Site Level	Site type	Estimated date when the site will be ICOS operational
Brasschaat	eco	1	Coniferous Forest	2011
Lochristi	eco	1	Short Rotation Coppice Culture	2011
Maasmechelen	eco	2	Heathland	2015
Vielsalm	eco	2	Mixed Forest	2014
Lonzée	eco	2	Agricultural site	2014
La Robinette	eco	2	Young Diverse Forest	2015
Simon Stevin	ocean		North Sea	2015
To be confirmed				
Belgica	ocean		North Sea	2016?
La Réunion	atm			2016?



La Robinette : station d'étude intensive sous les épicéas ©ULg