Report of the Programme Co-ordinating Centre

Kai Schwärzel & Marco Ferretti

Outline

1. Key Deliverables of Programme
   - Meetings
   - Reporting
   - Awareness raising
2. Contribution to the workplan of the convention

ICP FORESTS

ICP Forests Reporting

Key Deliverables

Meetings/events of the ICP Forests community in the period between September 2021 and August 2022

- 38th Task Force Meeting, 2-3 June 2022, held by video
- Meeting Heads of the Labs, 12-13 May 2022, Birmensdorf, hybrid meeting
- Joint Expert Panel Meeting (Meteo, Depo, Growth), 4-7 Apr 2022, Prague, hybrid meeting
- EP Meeting of Biodiversity and Ambient Air Quality, April 2022, held by video
- Programme Co-ordinating Group Meeting, 9-10 Nov 2021, Berlin, hybrid meeting

http://icp-forests.net/events

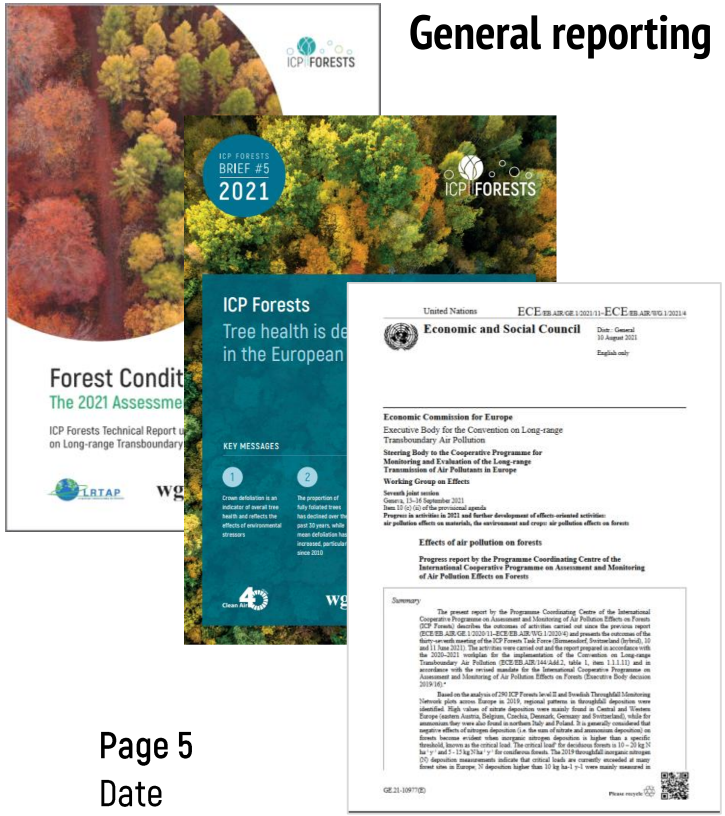
ICP FORESTS

Latest ICP Forests reports/publications

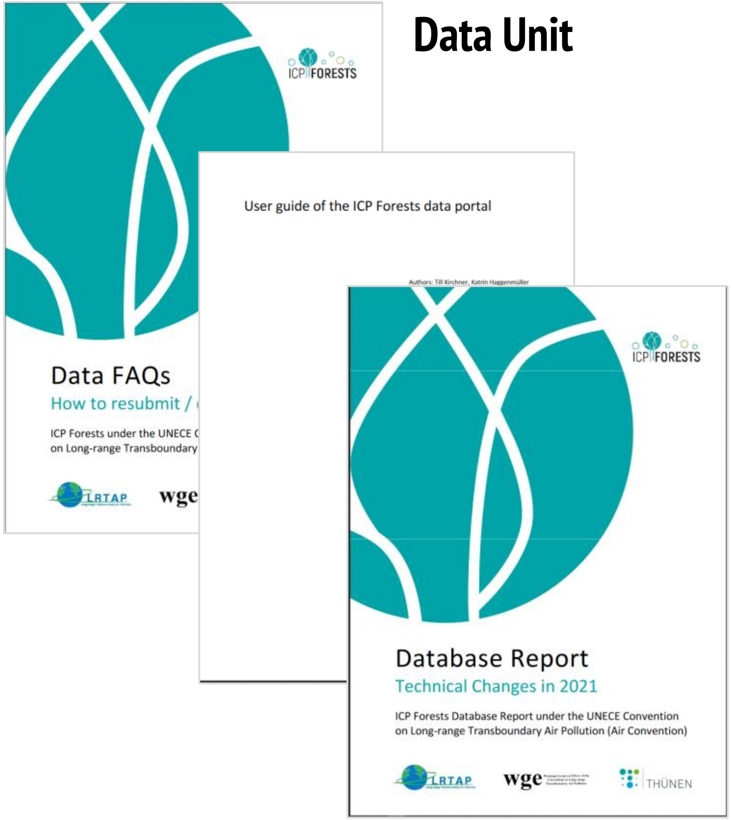
All publications are available on the ICP Forests website:

http://icp-forests.net/

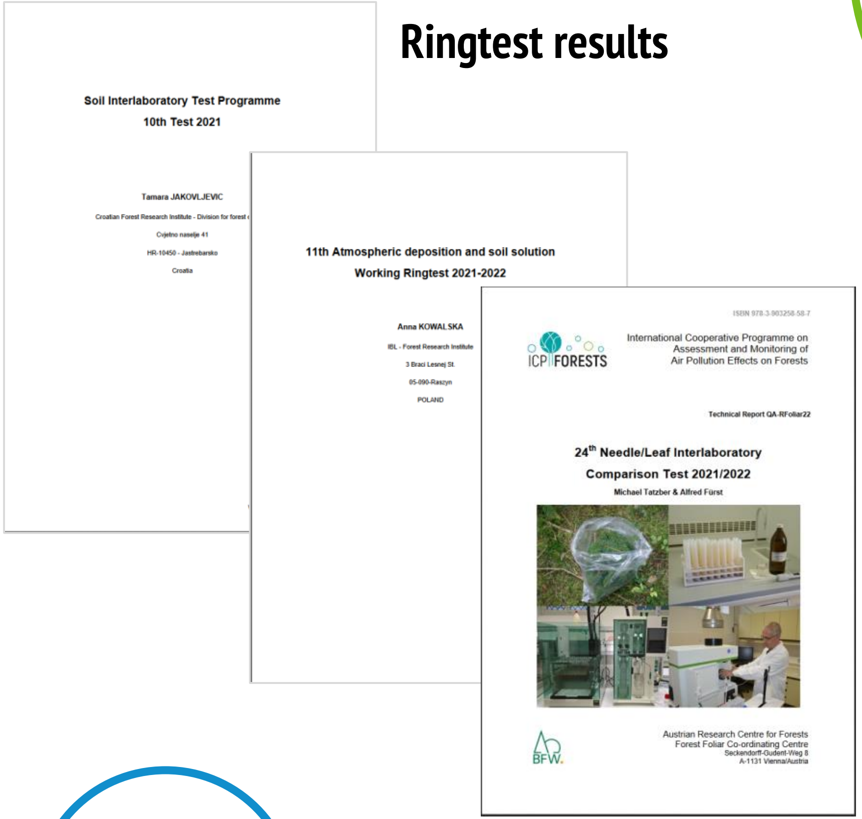
General reporting



Data Unit



Ringtest results



ICP Forests Technical Report 2022

- Overview by the chairs of the Expert panel of most significant literature/findings in their respective field
- National reports
- Regular chapters on
  - Atmospheric throughfall deposition in European forests in 2020
  - Tree crown condition in 2021
  - History and progress of the ICP Forests Ring test programme

ICP FORESTS

Awareness raising and advocacy

Policy Event at EU level – What and When?

Joint webinar of ICP Forests and FOREST EUROPE

Title: Monitoring and Assessing Forest Health

Date: 21st March 2022 (International Day of Forests)

https://foresteurope.org/event/webinar-monitoring-and-assessing-forest-health/

ICP FORESTS

Policy Event at EU level

Keynote Speakers

Jens Haertel – FOREST EUROPE

Dr. Marco Ferretti – Chairperson of ICP Forests

Dr. Päivi Merilä – Natural Resources Institute Finland (LUKE)

Additional panelists

Dr. Bernhard Wolfslehner – Team Leader of the EFI FOREST EUROPE Team

Dr. Ovidiu Badea – Romanian National Institute for Research and Development in Forestry "Marin Drăcea" (INCDS)

Dr. Roman Michalak – UNECE/FAO Forestry and Timber Section

Dr. Annemarie Bastrup-Birk – European Environment Agency (EEA)

Dr. Henrik Hartmann – IUFRO task force on tree mortality

Moderator

Dr. Stefanie Linser – EFI Forest Policy Research Network / University of Natural Resources and Life Sciences (BOKU)

ICP FORESTS

EU forests – new EU Framework for Forest Monitoring and Strategic Plans

In preparation

Call for evidence

Feedback period

08 April 2022 - 06 May 2022

FEEDBACK: CLOSED

UPCOMING

Public consultation

Planned for

Second quarter 2022

FEEDBACK: UPCOMING

Commission adoption

Planned for

Second quarter 2023

FEEDBACK: UPCOMING

About this initiative

Summary	The aim of this initiative is to develop an EU-wide forest observation framework to provide open access to detailed, accurate, regular and timely information on the condition and management of EU forests, and on the many products and ecosystem services that forests provide. This information will lead to more data-driven decision-making on forests. It is expected to increase public trust in forest management, reduce illegal logging, incentivise and reward more sustainable forest management, and support the adaptation of forests to climate change.
Topic	Environment
Type of act	Proposal for a regulation

Call for evidence

FEEDBACK: CLOSED

Feedback period

08 April 2022 - 06 May 2022 (midnight Brussels time)

View feedback received >

Call for evidence for an impact assessment - Ares(2022)2758583
English (190.5 KB - PDF - 3 pages)

Download

PCC commented on this new strategy

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13396-EU-forests-new-EU-Framework-for-Forest-Monitoring-and-Strategic-Plans_en

Law

EU forests – new EU Framework for Forest Monitoring and Strategic Plans

Have your say > Published initiatives > EU forests – new EU Framework for Forest Monitoring and Strategic Plans >

Feedback and statistics: Call for evidence for an impact assessment

Unique feedback (117) | Statistics

Showing results 71 to 80

04 May 2022 | Academic/research Institution

Programme Co-ordinating Centre of ICP Forests located at the Thünen Institute of Forest Ecosystems (Germany)

We, the Programme Co-ordinating Centre of ICP Forests, welcome the new EU initiative and show in the uploaded document how pan-European forest monitoring under the International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests, https://icp-forests.net) has been providing reliable data on the condition of European forests for decades. We also show what we have learned to help ensure that the...

03 May 2022 | Company/business organisation

UCFF - Les Coopératives Forestières (France)

L'Union de la Coopération Forestière Française estime utile et pertinente de disposer à l'échelle européenne d'informations harmonisées, régulièrement mises à jour et accessibles à tous sur la

ICP FORESTS

Contributions to the Workplan of the

WGE

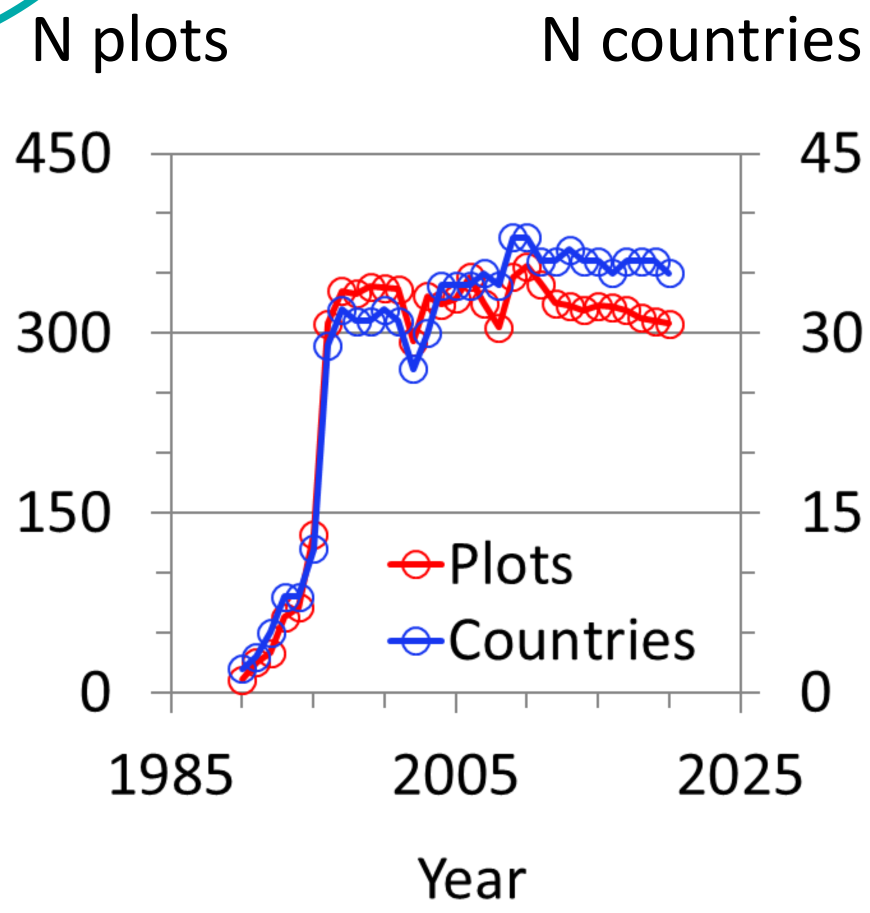
ICP FORESTS

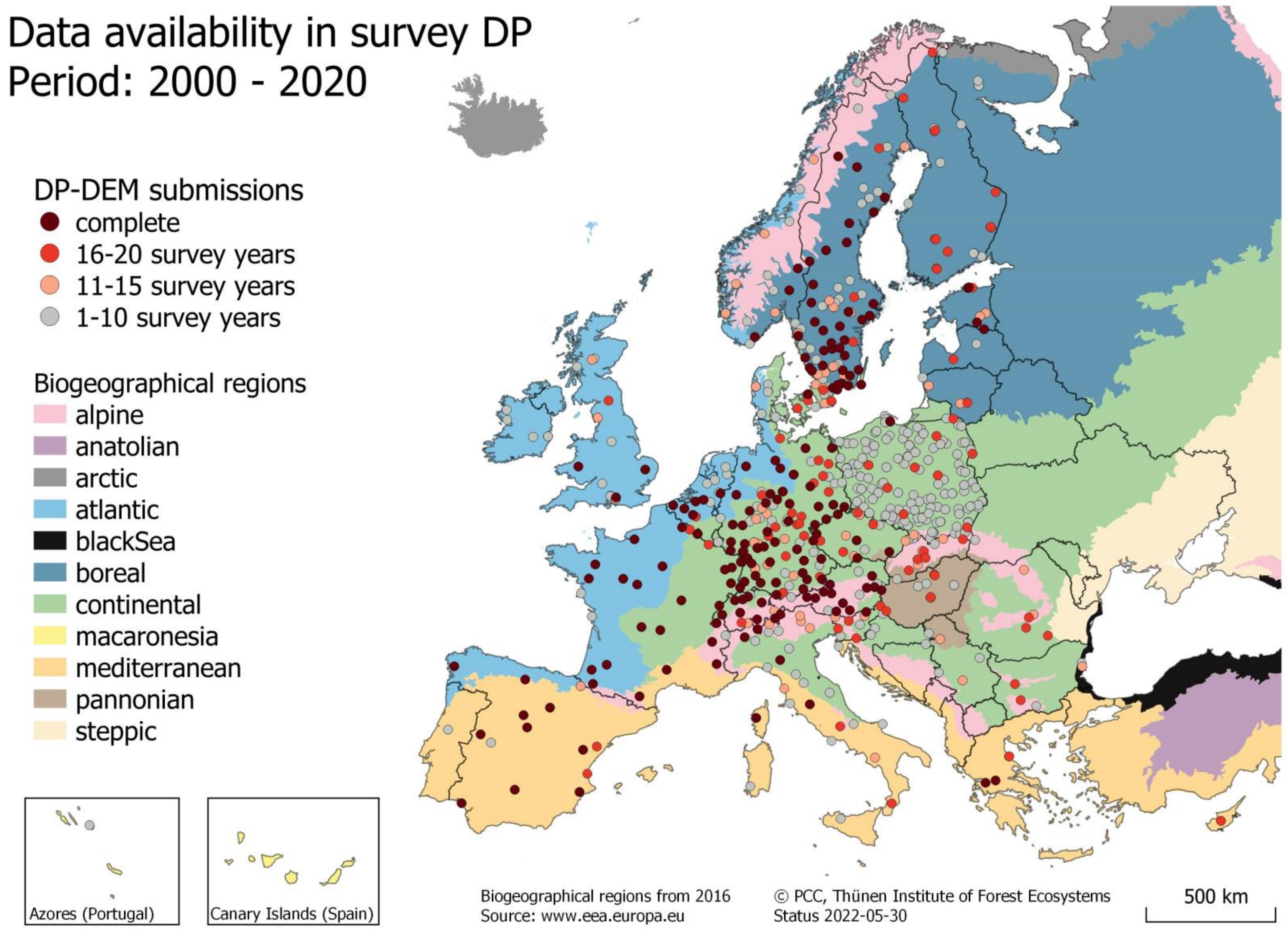
2021/22-2023 Workplan

Workplan Items	Examples
(1) Nitrogen deposition and its effects on forest ecosystem functions and services	- Report about status and trends of N levels in European forests (2022, 2023) - Scientific papers (e.g. Marchetto et al, 2021 in Frontiers; Du et al. in Science of the Total Environment, Weldon et al., 2022 in Annals of Forest Sciences)
(2) Air pollution-related cause-effect relationships in forests in a changing climate	- Scientific papers (e.g. Anthony et al., 2022 in ISME; Jamie et al., 2022 in Global Change Biology)
(3) Status & trends of heavy metals	- Scientific papers (e.g. Wohlgemuth et al., 2022 in Biogeosciences) - ICP Forests Brief to heavy metal concentrations in Level I plots across Europe (in preparation)
(4) Ambient Ozone its effects on forest ecosystem functions and services	Report on the effect of air pollution on forest health and productivity (done)

ICP FORESTS

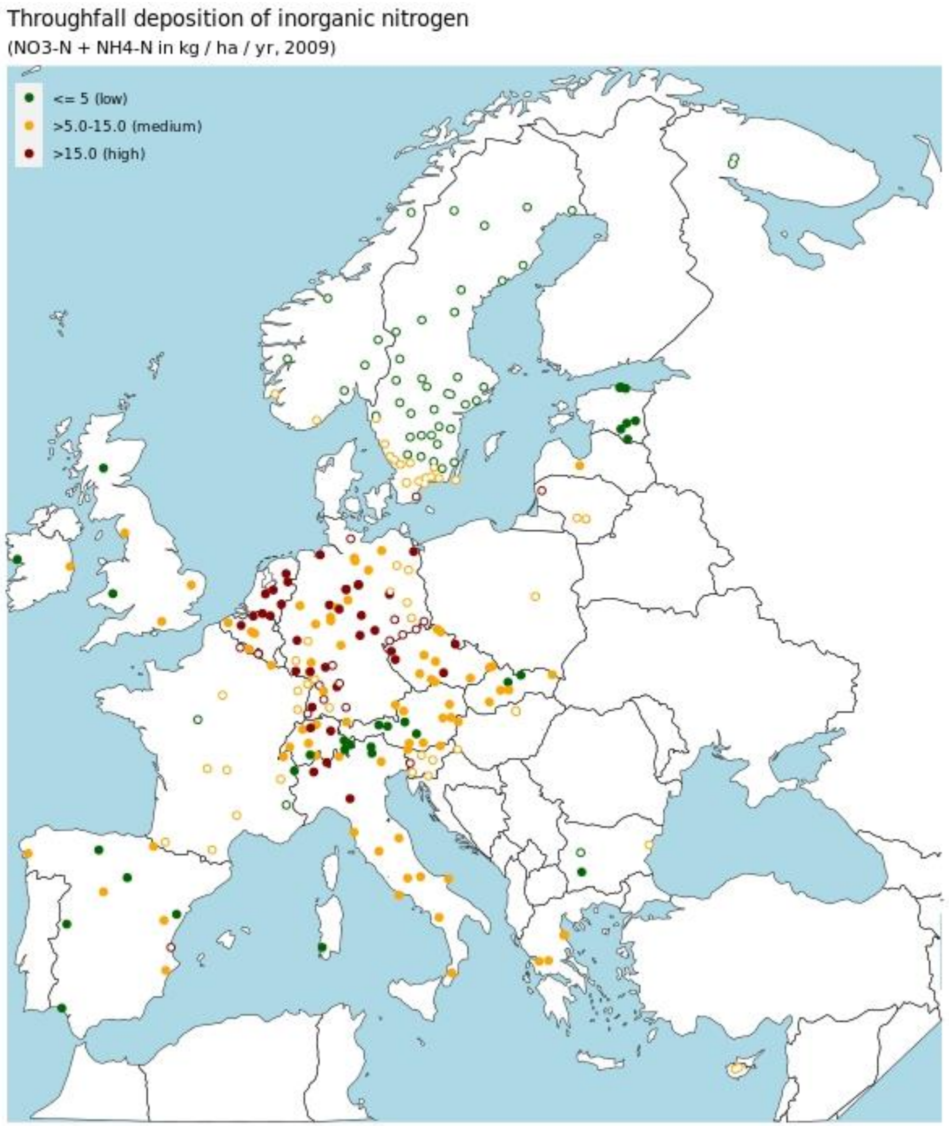
Workplan item (1) : Availability of deposition data measured on ICP forest plots



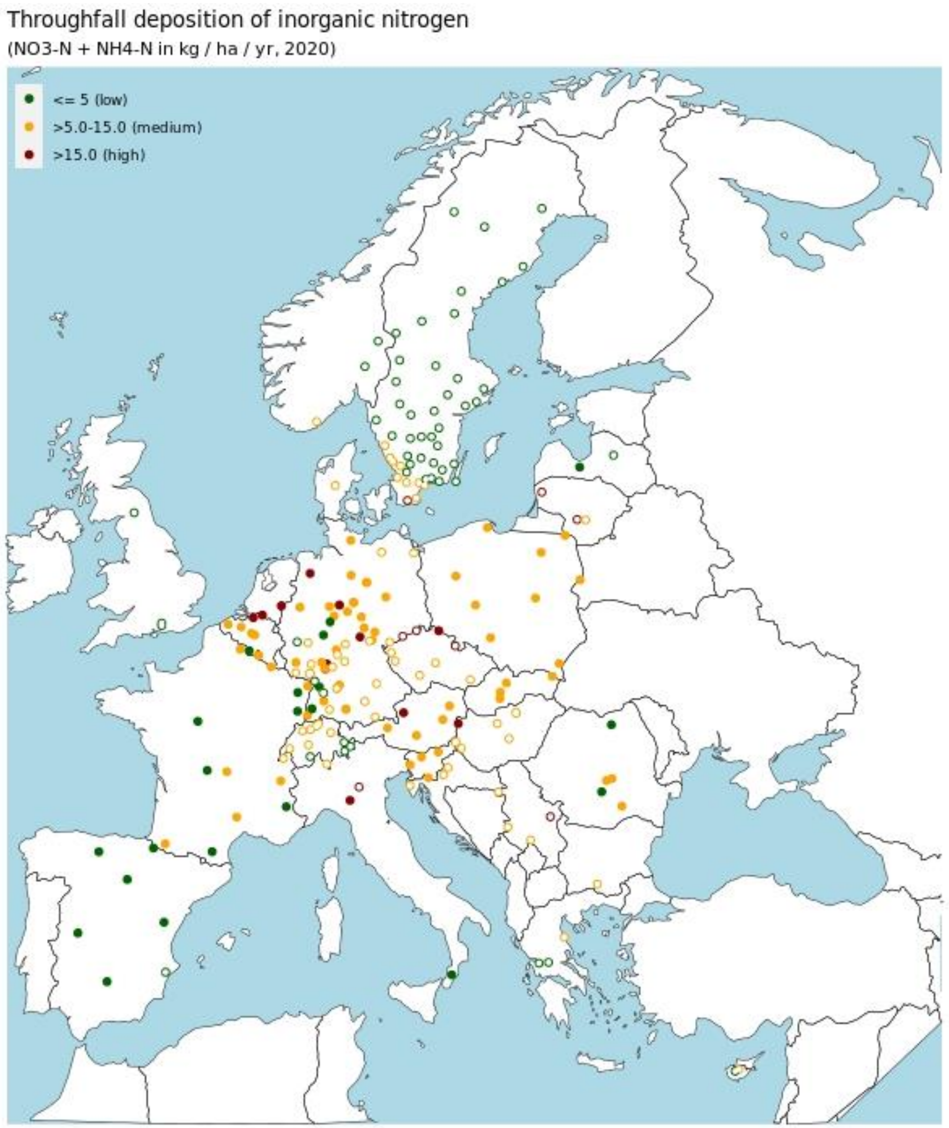


ICP FORESTS

Workplan Item (1): Throughfall deposition of nitrogen: Only minor change in spatial patterns since 2009

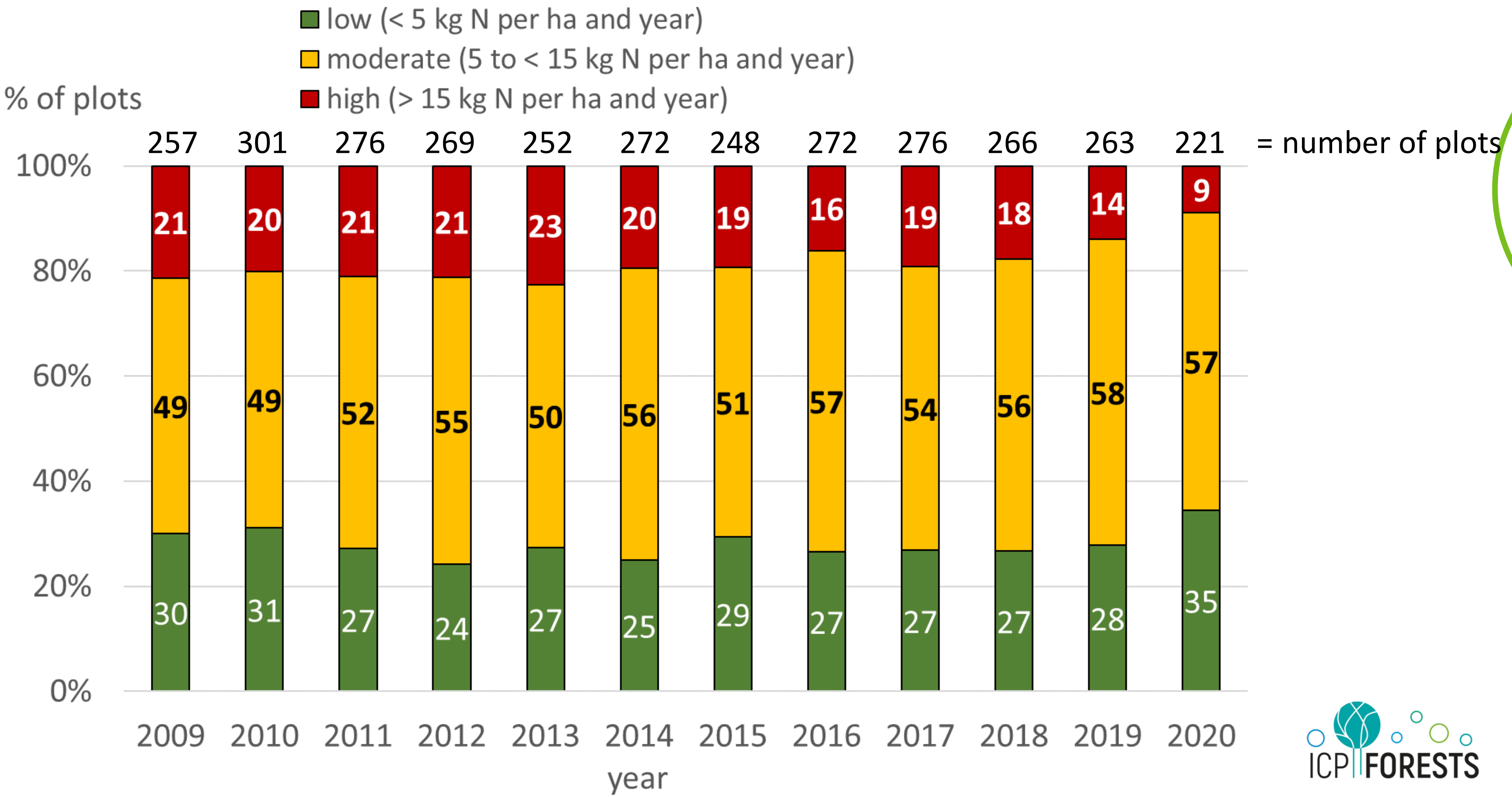


2009



2020

Workplan Item (1): % of ICP Forests plots per load class over time (2009 to 2020):



ICP FORESTS

Workplan Item (1): Comparision between modelled EMEP and measured ICP Forests/SWETHRO data

frontiers in Environmental Science

Marchetto et al. (2021). Good Agreement Between Modeled and Measured Sulfur and Nitrogen Deposition in Europe, in Spite of Marked Differences in Some Sites.

1. Modeled and measured results are in good agreement for sulphur and nitrate open field deposition but not so well for ammonium.
2. Modeled sulphur total deposition compares well with measured ICP Forests throughfall deposition of sulphur.
3. Relative large discrepancy between modeled EMEP and measured ICP Forests/SWETHRO throughfall deposition of nitrate and ammonium were found.

ICP FORESTS

Nitrogen deposition: Summary and conclusion

1. Spatial patterns in inorganic nitrogen deposition is relatively stable since 2009.
2. Data gaps in field measurements are unavoidable.
3. EMEP data can be used to fill data gaps, but the relatively large discrepancy between modeled EMEP and measured nitrate and ammonium depositions must be addressed.
4. Closer collaboration between EMEP and ICP Forests regarding nitrogen deposition would be desirable.

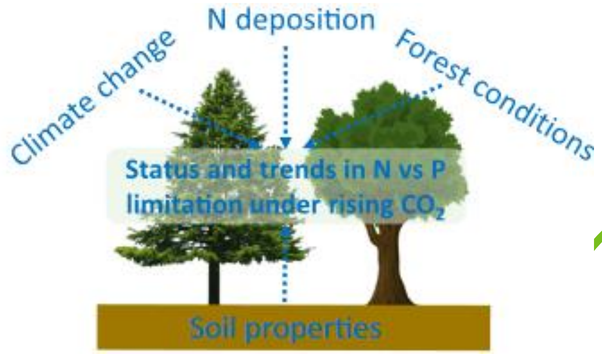
ICP FORESTS

Workplan Item (1): Nitrogen deposition and its effects on forest ecosystem functions and services

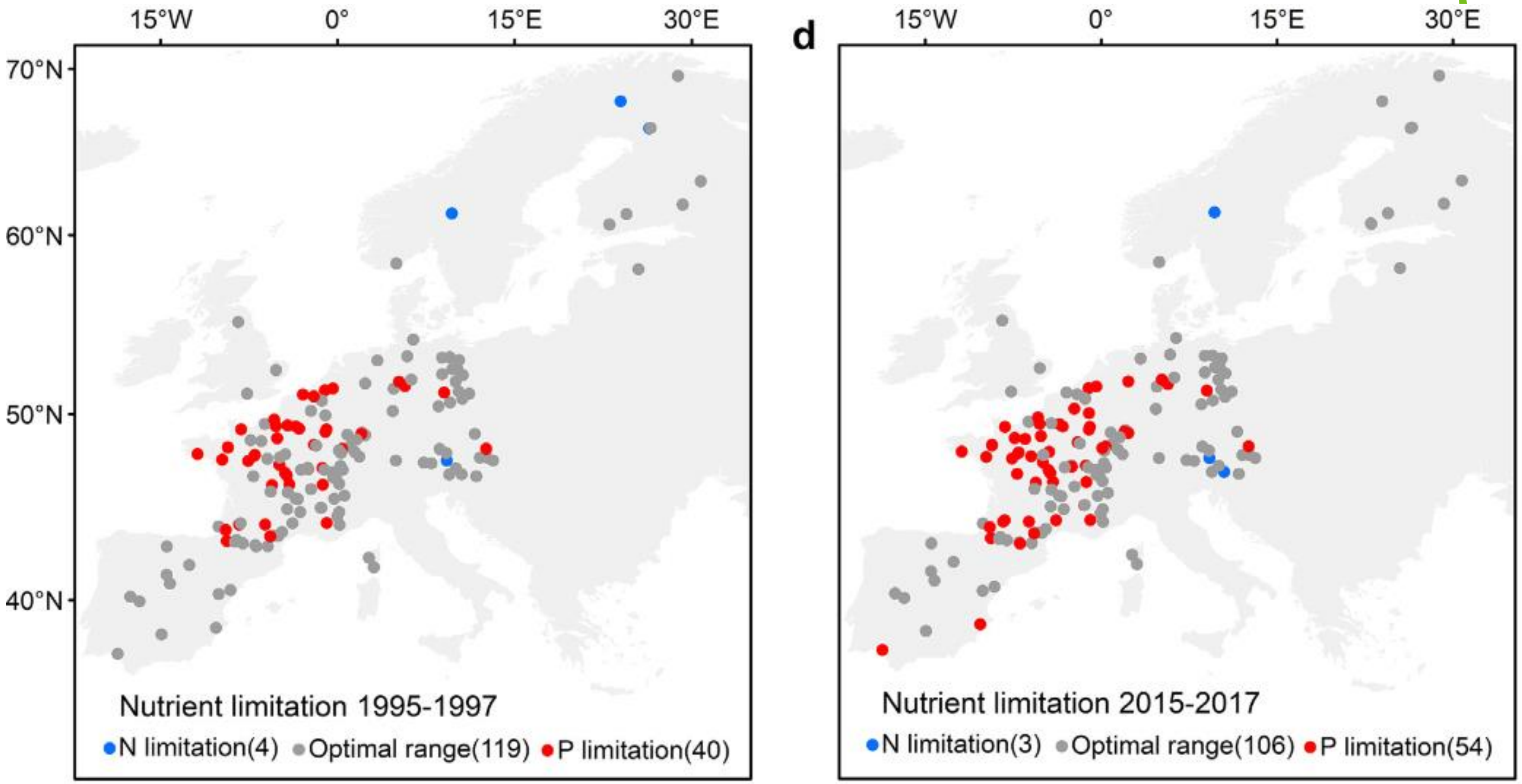
Science of The Total Environment
Volume 771, 1 June 2021, 145391

Spatially divergent trends of nitrogen versus phosphorus limitation across European forests

Enzai Du [a, b], Maarten van Doorn [c, d], Wim de Vries [c, d]



Decreasing trends in deposition since the 1990s lead to imbalances in nutrient supply to forests.

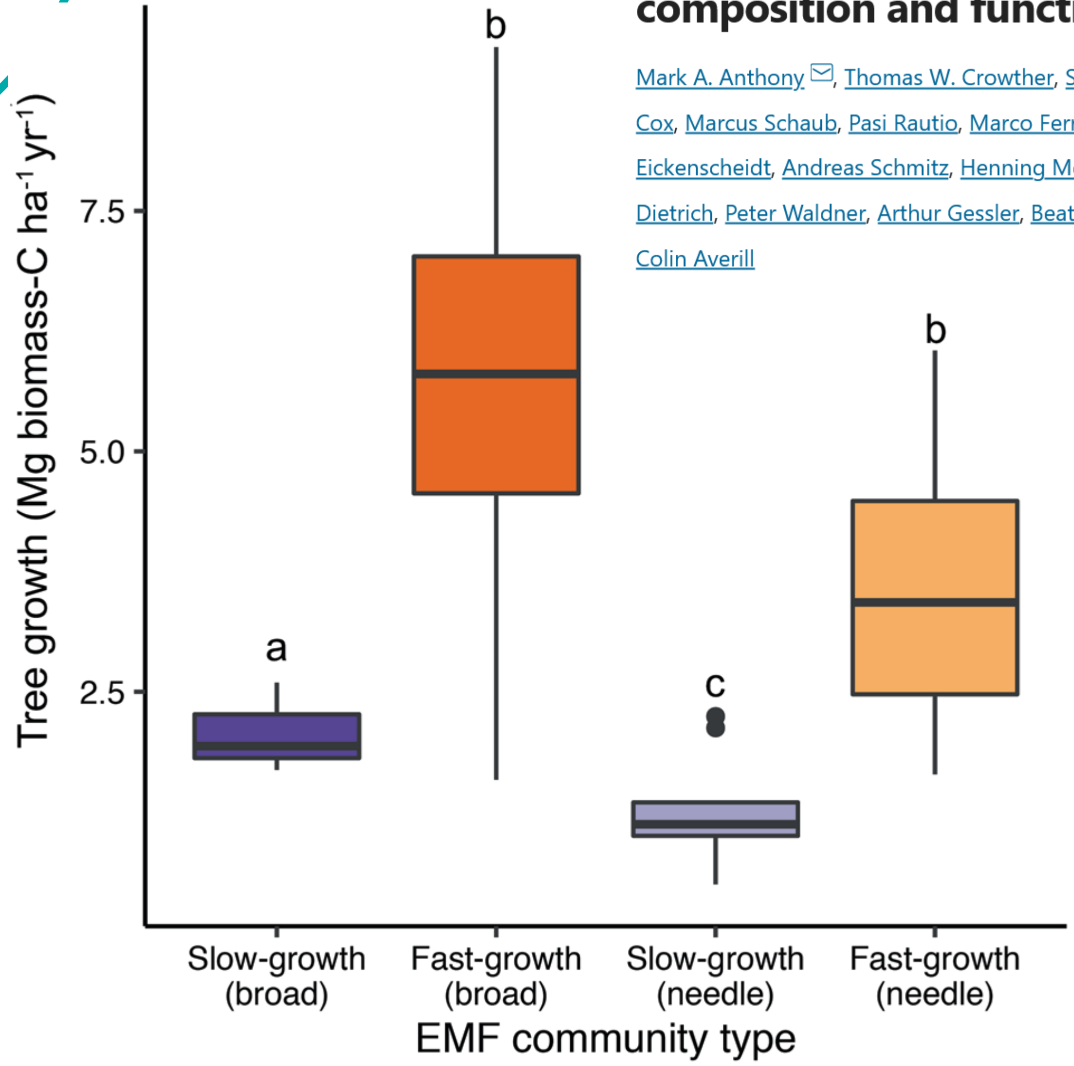


Du et al (2022): Summary and conclusion

1. The trend toward P limitation is more pronounced in deciduous forests with higher MAT and wider soil C:N ratios.
2. Only a small proportion of forests showed a shift toward N limitation, and this trend was stronger in forests with a greater decrease in N deposition.
3. A large proportion (56%) of European forests showed non-significant change in N and P limitation status between 1995 and 2017; it is unclear how the nutritional status of these forests will change under changing climate and N deposition.

ICP FORESTS

Workplan item (2): Air pollution-related cause-effect relationships in forests in a changing climate

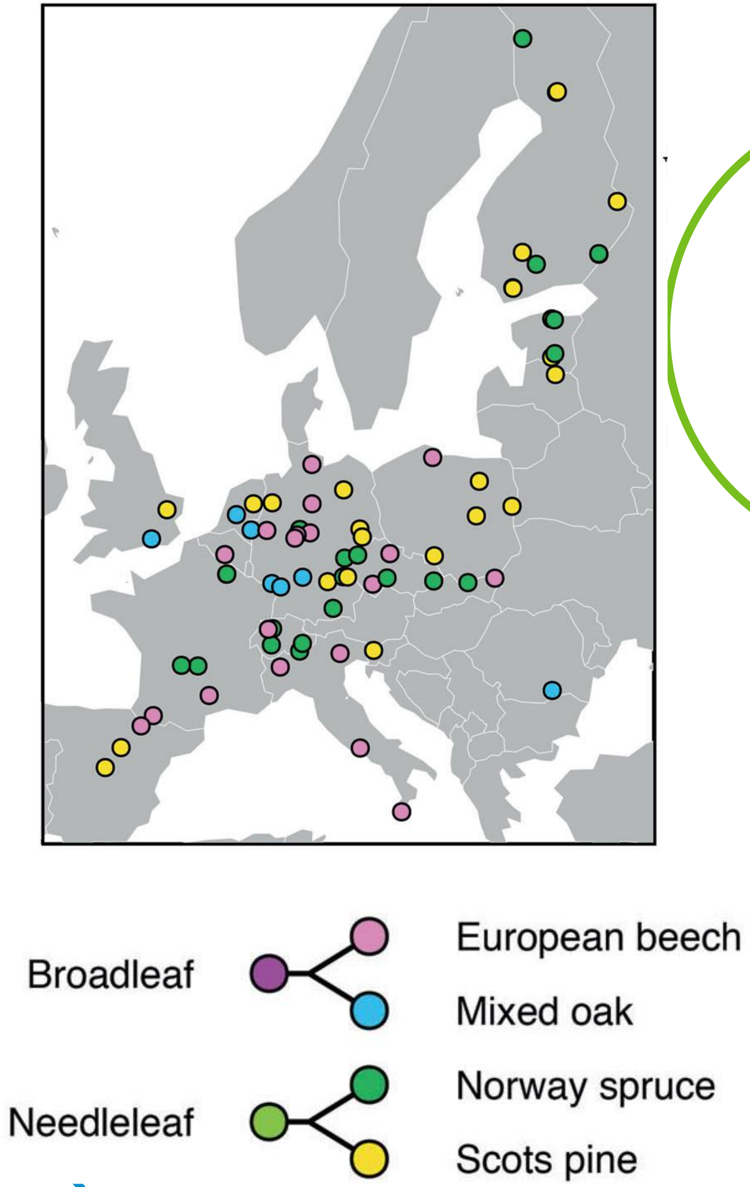


nature > the isme journal > articles > article

Article | Open Access | Published: 10 January 2022

Forest tree growth is linked to mycorrhizal fungal composition and function across Europe

Mark A. Anthony, Thomas W. Crowther, Sietse van der Linde, Laura M. Suz, Martin I. Bidartondo, Filipa Cox, Marcus Schaub, Pasi Rautio, Marco Ferretti, Lars Vesterdal, Bruno De Vos, Mike Dettwiler, Nadine Eickenscheidt, Andreas Schmitz, Henning Meesenburg, Henning Andreae, Frank Jacob, Hans-Peter Dietrich, Peter Waldner, Arthur Gessler, Beat Frey, Oliver Schramm, Pim van den Bulk, Arjan Hensen & Colin Averill



Anthony et al. (2022): Summary and conclusion

1. EMF composition is controlled by inorganic nitrogen deposition, among other factors.
2. The composition of EMF communities is an important factor for the growth of European forests.
3. Fast-growing forests, in particular, harbor EMF communities that specialize in inorganic nitrogen uptake.
4. Slow-growing forests are characterized by EMF communities, which uptake organic nitrogen in particular.

ICP FORESTS

Workplan item (2): Air pollution-related cause-effect relationships in forests in a changing climate

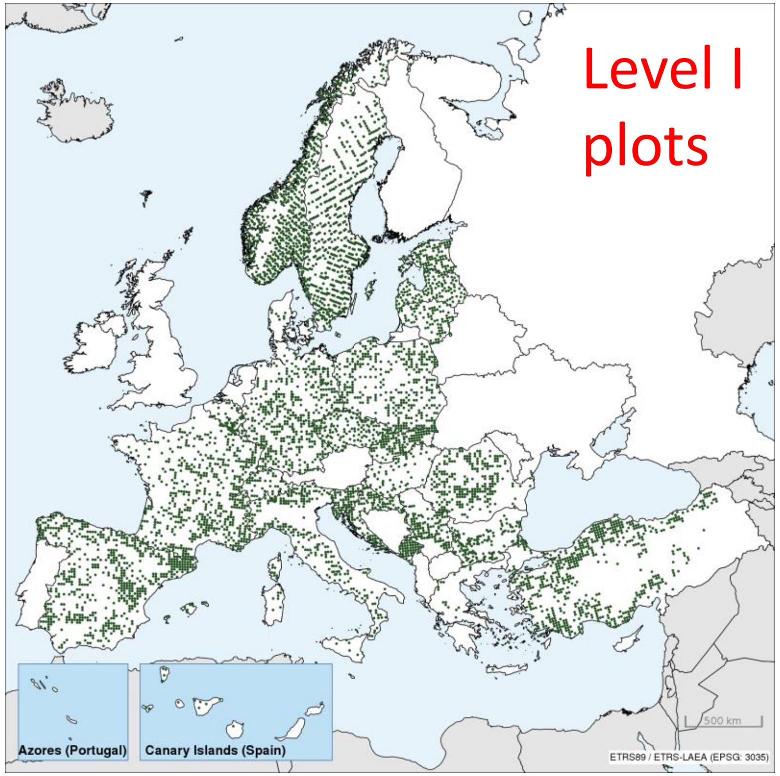
Global Change Biology

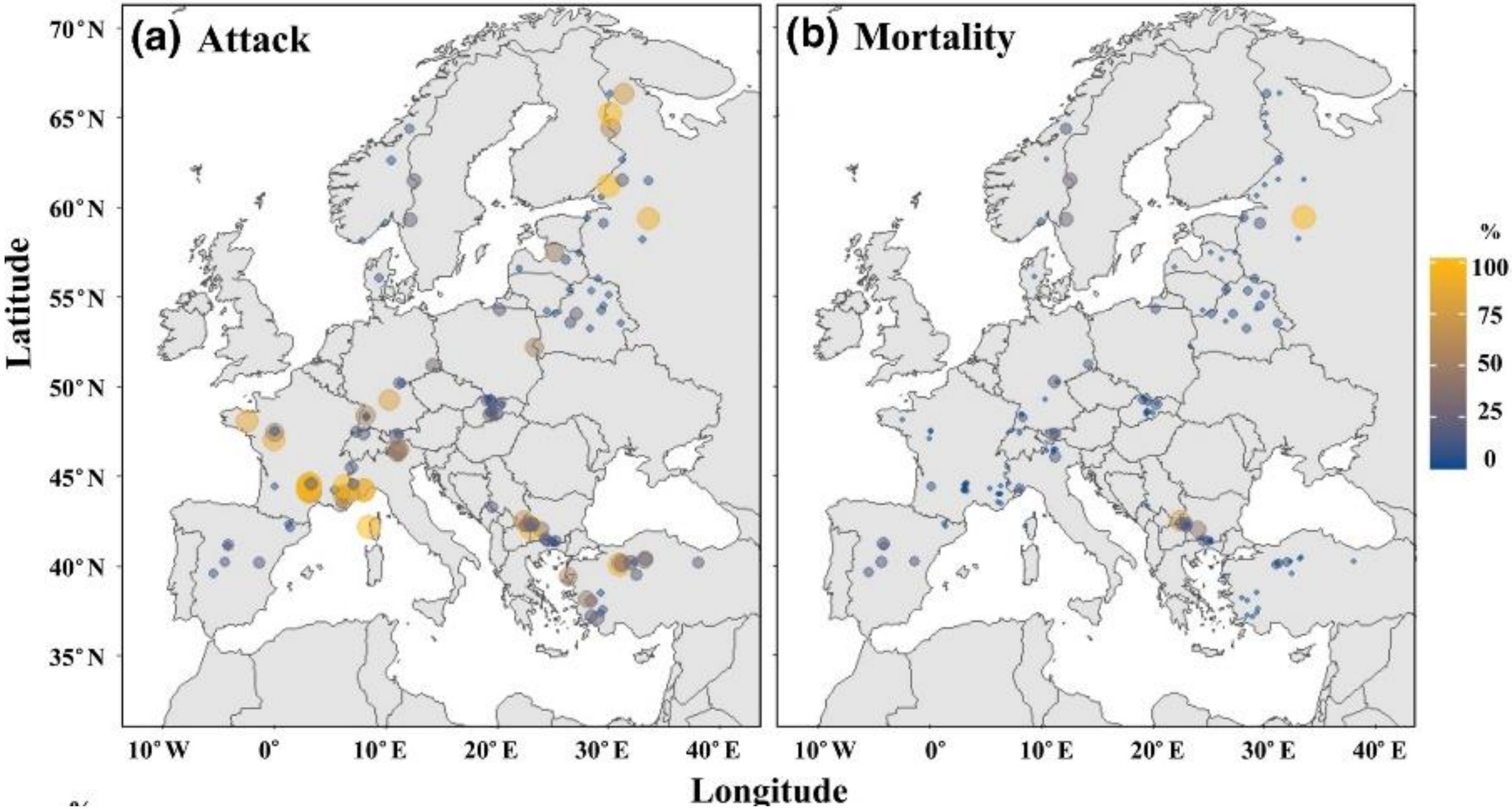
RESEARCH ARTICLE | Full Access

Climatic and stand drivers of forest resistance to recent bark beetle disturbance in European coniferous forests

Luciana Jaime, Enric Batllori, Marco Ferretti, Francisco Lloret

First published: 28 January 2022 | https://doi.org/10.1111/gcb.16106 | Citations: 1





ICP FORESTS

Jamie et al. (2022): Summary and conclusion

1. Forest resistance in parts of Europe (central, SE, and NE) may be at risk under the attack of multivoltine bark beetle species (particularly P. sylvestris and P. abies).
2. Forest resistance decreases during prolonged heat and drought, resulting in rapid death of trees once they are infested.

ICP FORESTS

Workplan Item (3): Status and trends of heavy metals in forest ecosystems

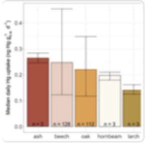
Biogeosciences, 19, 1335–1353, 2022
https://doi.org/10.5194/bg-19-1335-2022

Article | Assets | Peer review | Metrics | Related articles

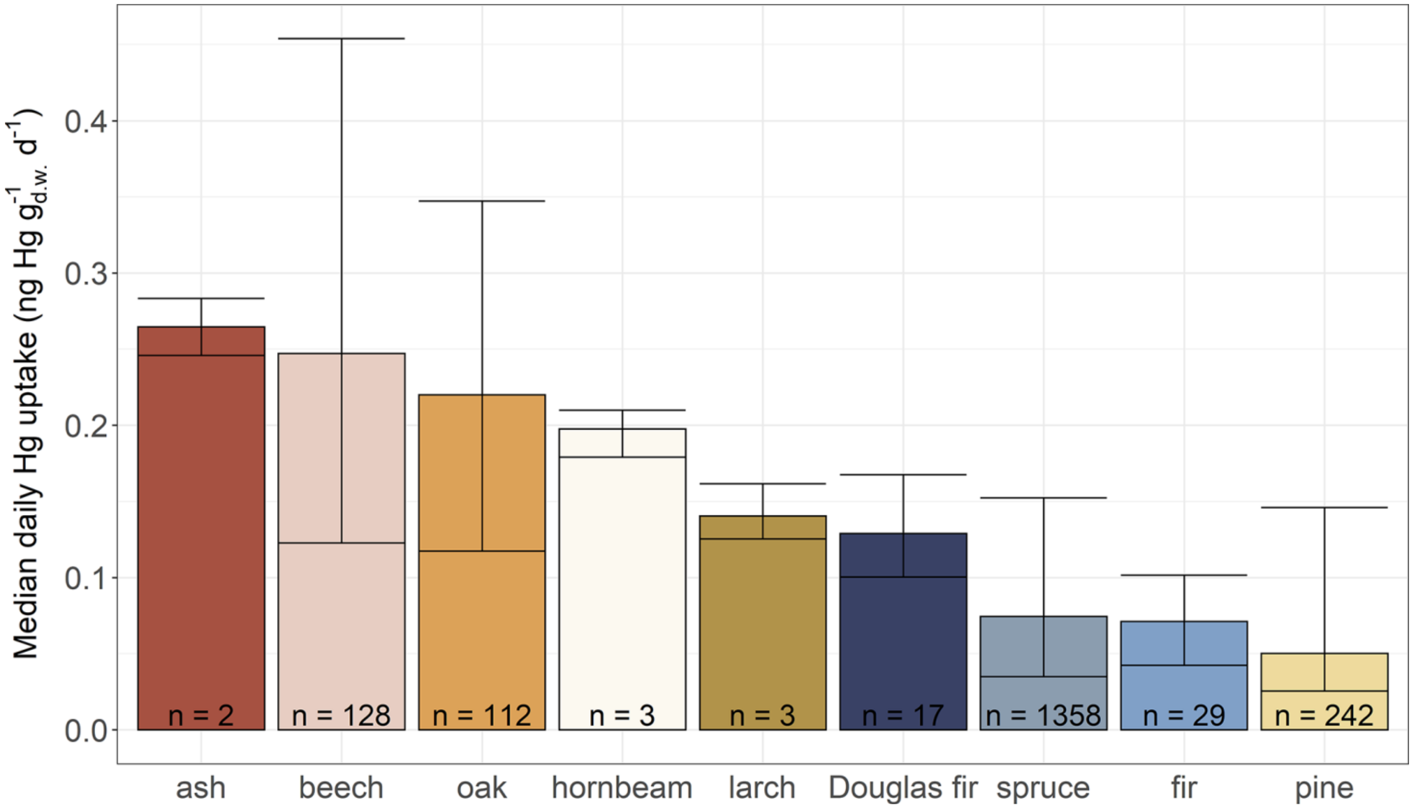
Research article

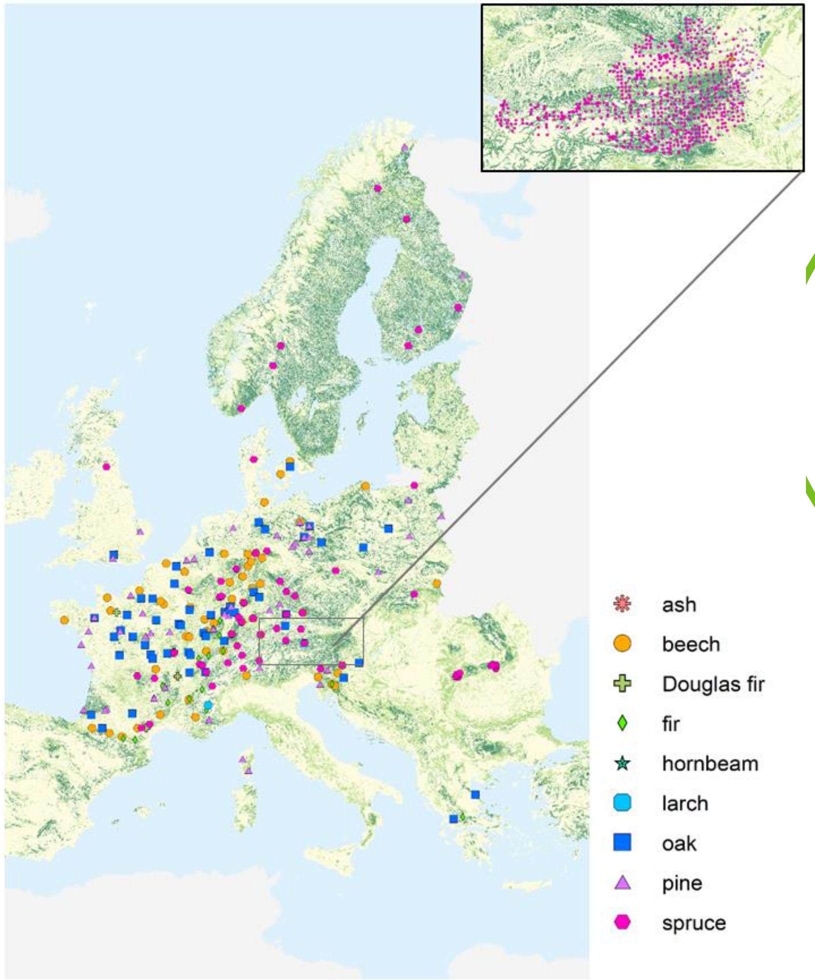
04 Mar 2022

Physiological and climate controls on foliar mercury uptake by European tree species



Lena Wohlgemuth[1], Pasi Rautio[2], Bernd Ahrends[3], Alexander Russ[4], Lars Vesterdal[5], Peter Waldner[6], Volkmar Timmermann[7], Nadine Eickenscheidt[8], Alfred Fürst[9], Martin Greve[10], Peter Roskams[11], Anne Thimonier[6], Manuel Nicolas[12], Anna Kowalska[13], Morten Ingerslev[5], Päivi Merilä[14], Sue Benham[15], Carmen Iacoban[16], Günter Hoch[1], Christine Alewell[1], and Martin Jiskra[1]





ICP FORESTS

Wohlgemuth et al. (2022): Summary and conclusion

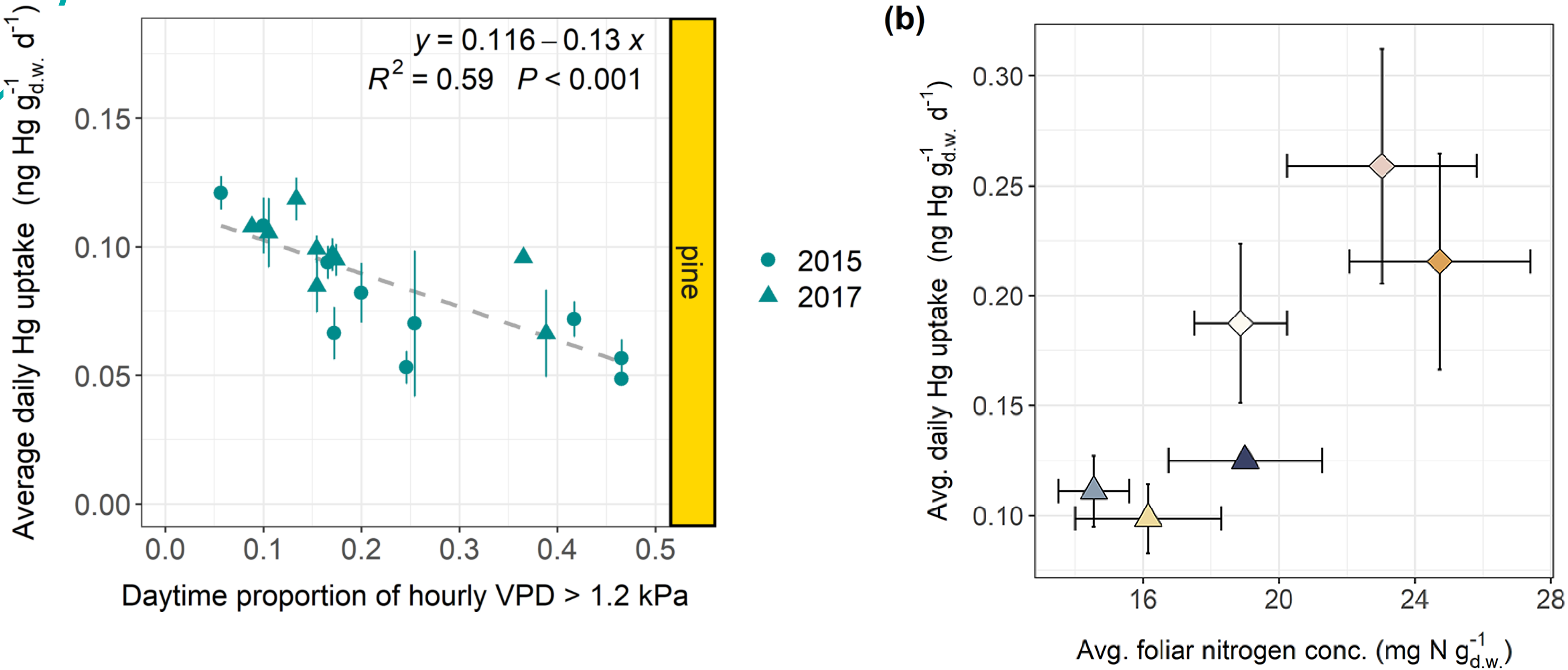
1. Daily foliar Hg uptake rates differ between deciduous trees and conifers. On average, the daily stomatal Hg uptake of deciduous tree species was three times higher than that of conifers.
2. Foliar Hg uptake Hg is controlled by meteorological (VPD, T) soil hydrological conditions, and physiological activitiy.
3. The results of this study may help to improve stomatal Hg deposition models.

ICP FORESTS

Thank you for listening.

2022-2023 Workplan- an example:

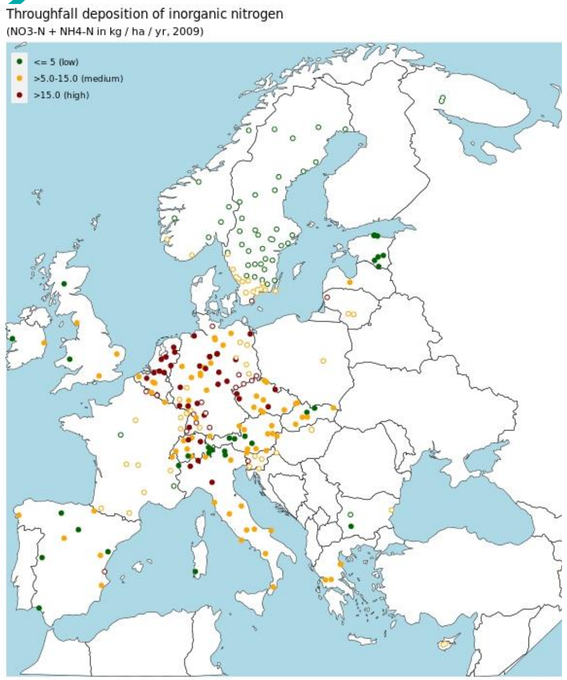
Status and trends of heavy metals in forest ecosystems



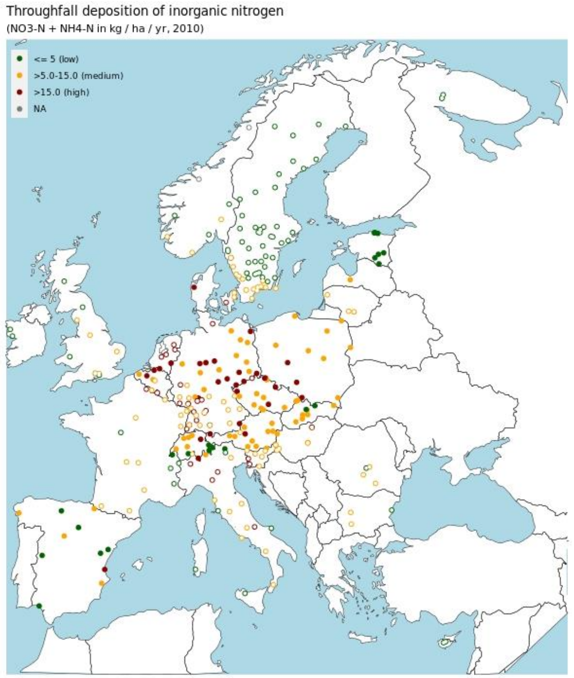
Source: Wohlgemuth et al., 2022

ICP FORESTS

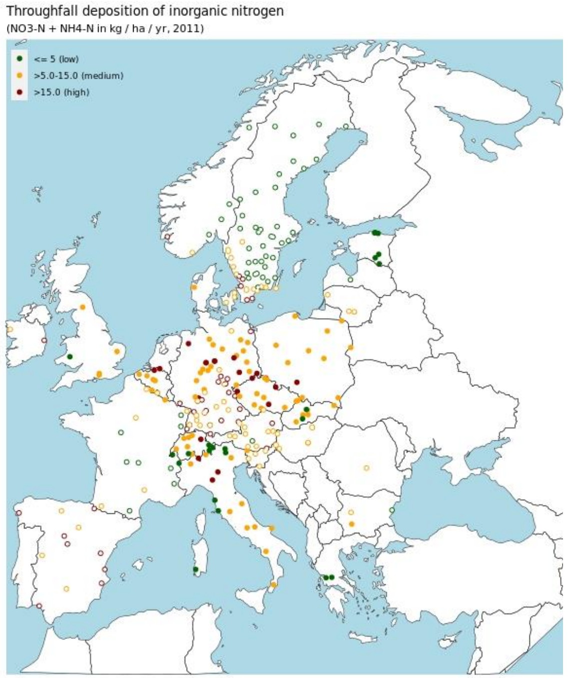
Annual throughfall deposition of inorganic nitrogen (2009-2012)



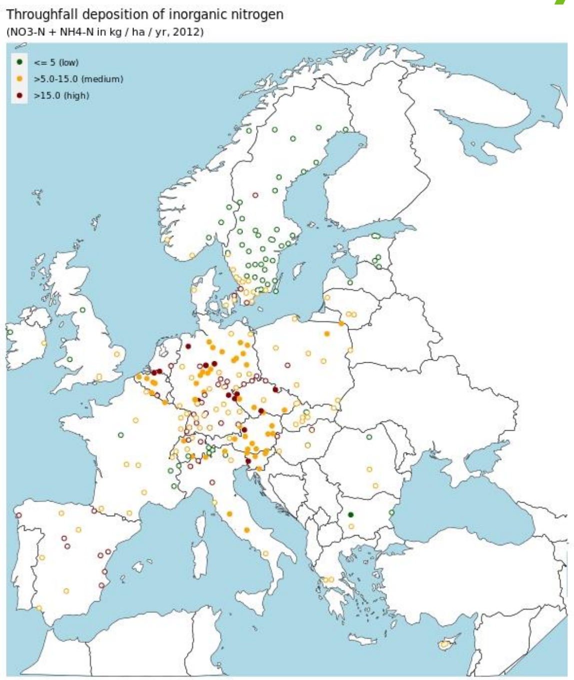
2009



2010

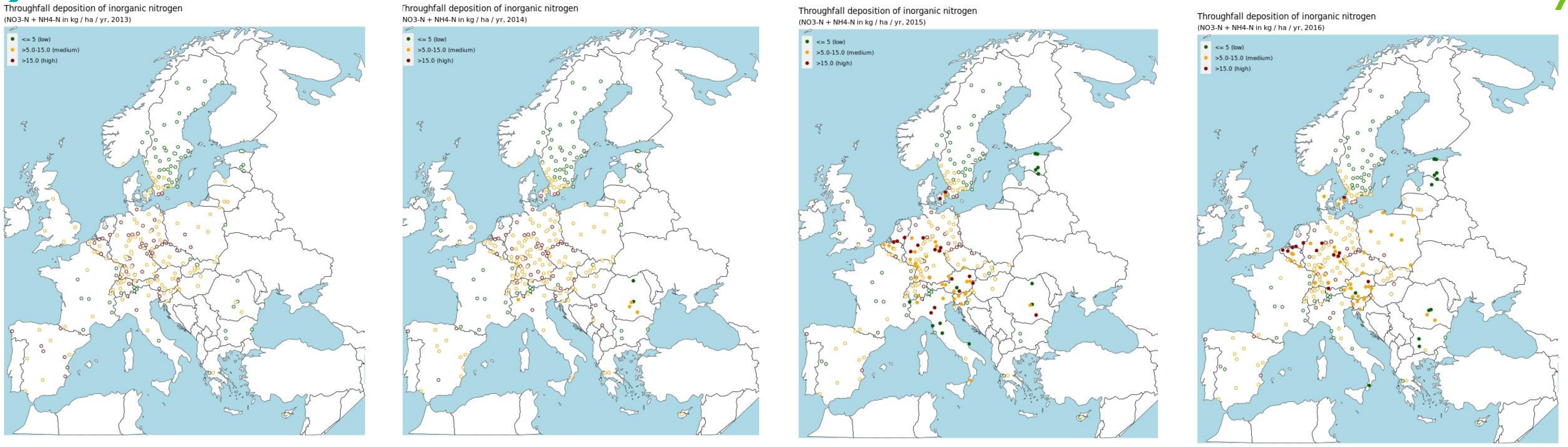


2011



2012

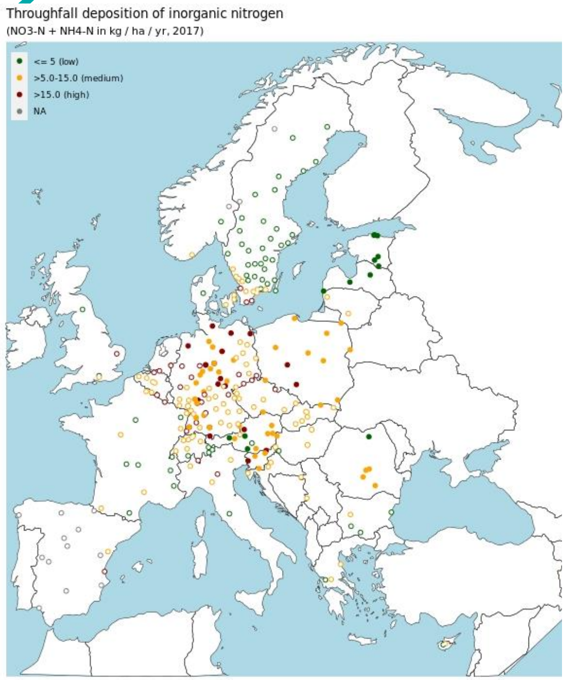
Annual throughfall deposition of inorganic nitrogen (2013-2016)



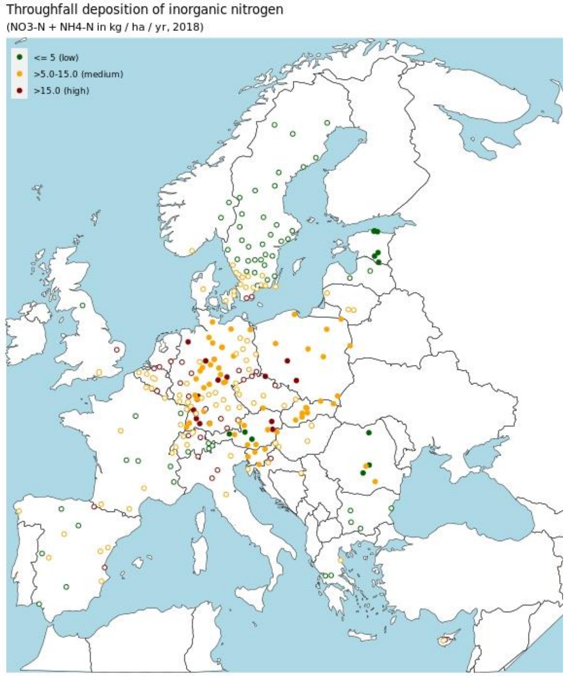
2013 2014 2015 2016

ICP FORESTS

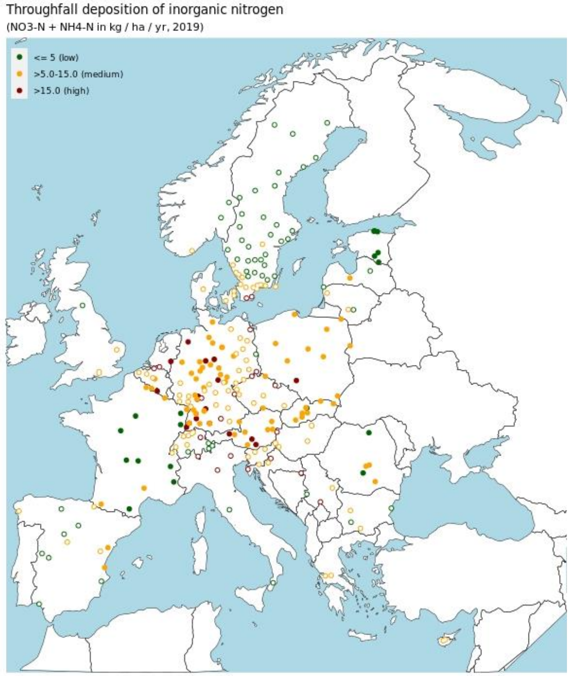
Annual throughfall deposition of inorganic nitrogen (2017-2020)



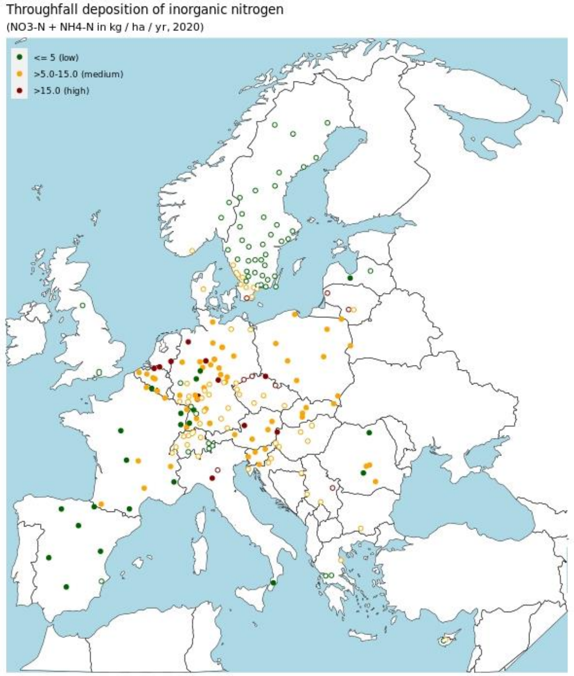
2017



2018



2019



2020

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