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IUFRO will encapsulate, and distribute in plain language, brief, topical and policy-relevant highlights of those findings, along with information on where/how to access the full documents. The **IUFRO Spotlight** findings will be distributed in a periodic series of emails as well as blog postings.

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Supersites for Superior Forest Science

The initiative for establishing Supersites for forest research is only a few years old.

In these supersites, sophisticated, state-of-the-art instruments are used and a multitude of factors in the ecosystem is to be measured to obtain baseline data. As examples: spectrometers will measure how trees absorb and scatter light; laser scanners will map the forest's three-dimensional structure; soil, plant and atmospheric sciences will be integrated; and mechanistic and policy-oriented modeling will be part of the concept.

Currently operated forest research sites may be integrated in the Supersite network upon upgrading of instrumentation. Eventually, a worldwide network where relevant ecosystem components can be simultaneously monitored and manipulated will be created, including research sites to be newly established, in particular, in the tropics and subtropics.

The information and knowledge gained from the Supersite network will be transferred to other forest researchers and managers to help them understand how forests affect, and are affected by, climate and how to take appropriate steps to mitigate hazards and to capitalize on opportunities.

The editors of the publication on **Climate Change, Air Pollution and Global Challenges**, see supersites as an effective and rewarding way to ensure that complex links between air pollution and climate change and their joint impacts on forests can be studied, understood and used for mitigation of human impacts.

In terms of forest health, the publication's editors say climate change and air pollution are two sides of the same coin. However, in research terms, air pollution has mostly been treated as a separate issue that affects only regional or local forest decline.

The publication warns that the omission of air pollution in climate change research leaves a significant gap and argues that such an omission creates a major impediment to a comprehensive understanding of both the adaptation capabilities of forest ecosystems when faced with man-made changes and also how to mitigate the effects of those changes.

They draw particular attention to the climate interactions and air pollution impacts in arising "hot spots" in eastern Asia and across the southern hemisphere.

They believe only a new generation of forest research supersites can provide a thorough understanding of the current challenges and how forests can acclimate and cope with them. They also see the global network of these sites stimulating collaboration across continents and hemispheres, which will be essential for meeting the challenges.

The ultimate goal is to gain an unprecedented amount of information about how forests react to climate and air pollution through coordinated forest research activities. This knowledge will then become available to develop best forest management strategies to adapt to changing climate.

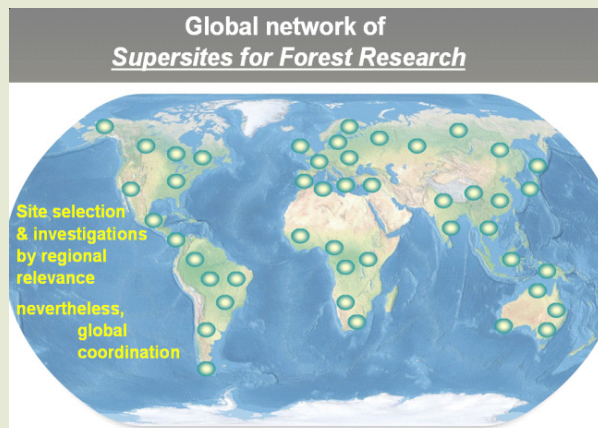


Fig. 1: Global map exemplifying potential locations and types of forest ecosystems to eventually become part of the Supersite research network.



Particular need for "Supersites for Forest Science" in the sub-tropical zonobiome, exemplifying Atlantic Forest (State of Rio de Janeiro/Brazil; left) and Cerradao (State of Sao Paulo/Brazil; right).
Photos: R. Matyssek

For this goal to be achieved, the editors say, decision makers must recognize that the proposed supersite network will answer key questions on interrelated global impacts of air pollution and climate change on forests. They also add that sufficient funding must be ensured to coordinate and operate the network.

In addition to the obvious beneficiaries in the forest community – policy makers, forest managers, scientists, NGOs and other forest stakeholders – the editors believe the major beneficiary will be the global environment and thus, mankind.

The publication was a cooperative effort of [IUFRO Research Group 7.01.00](#) and the EU-funded COST (European Cooperation in Science and Technology) Action FP0903 MAFor (Climate Change and Forest Mitigation and Adaptation in a Polluted Environment).

The editors are: Rainer Matyssek, Technische Universität München, Germany; Nicholas Clarke, Norwegian Forest and Landscape Institute, Ås; Pavel Cudlin, Academy of Sciences of the Czech Republic, České Budejovice; T.N. Mikkelsen, Technical University of Denmark, Roskilde; J-P. Tuovinen, Finnish Meteorological Institute, Helsinki; Gerhard Wieser, Federal Office and Research Centre for Forests, Innsbruck, Austria; and Elena Paoletti, IPP-CNR, Florence, Italy.

The full 2013 publication, ***Climate Change, Air Pollution and Global Challenges***, can be found at: <https://www.elsevier.com/books/climate-change-air-pollution-and-global-challenges/matyssek/978-0-08-098349-3>

A 2014 publication, ***Forest Trees Under Air Pollution as a Factor of Climate Change***, offers further information on the same subject.

It can be found at: http://link.springer.com/chapter/10.1007/978-94-017-9100-7_7

Further reading: <http://www.iufro.org/science/divisions/division-7/70000/70100/70102/publications>

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Suggestions for reports and findings that could be promoted through *IUFRO Spotlight* are encouraged. To be considered, reports should be fresh, have policy implications and be applicable to more than one country. If you would like to have a publication highlighted by *Spotlight*, contact: Gerda Wolfrum, IUFRO Communications Coordinator, [wolfrum\(at\)iufro.org](mailto:wolfrum(at)iufro.org)

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