



Focusing on new research and education

Southern Swedish Forest Research Centre
Annual report 2023

Rapid growth calls for flexibility

About 35 years ago, the foundation was laid for what is today the Southern Swedish Forest Research Centre. Our institution has continued to develop in step with societies needs and various forest policy changes.



Magnus Löf.

Today, the department consists of several different disciplines and we have broadened our perspective on how the forest can be used, while also increasing our responsibility with forestry education.

30 PhD students

In last year's column, I mentioned all our new research initiatives funded by various research foundations and the forest industry.

The year 2023 has been marked by the initiation of these projects. As these projects progress, they are working towards forming new collaborations, implementing field studies and personnel are continuing to be recruited.

At the time of writing, there are approximately 30 PhD students enrolled at the department and more are on the way!

It is very gratifying to see this new talent in the depart-

ment, as they are working hard on future oriented and applied PhD projects that will be beneficial to the forestry sector in the broadest sense.

Three parallel cohorts

During the year, we also put a lot of work into organizing our education courses and programmes.

The international bachelor's program Forest & Landscape is now fully developed and three cohorts are running in parallel at our our teaching premises.

It is very gratifying that so many students are applying to the program! Together with our international master's Euroforester, this means that the institution will train many of the forestry experts of the future.

Growing as an institution is mainly positive, but also places high demands on the employees in terms of flexibility and cooperation skills. Here, I think you are all world class and want to thank you for a good job in 2023!

Thanks Magnus and Per!

During the year, two employees retired. I would like to thank Magnus Mossberg and Per Fornling for their contributions to forest science research.

MAGNUS LÖF, HEAD OF DEPARTMENT

Contact persons

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Elias Andersson, assistant Head of Department.

Education

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Research

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Silviculture

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Pathology

Michelle Cleary, Iryna Matsiakh, Donnie Peterson, Jonas Rönnerberg, Dusan Sadikovic, Patrick Sherwood.

Ecology and conservation

Jörg Brunet, Laura Juvany Canovas, Igor Drobyshev, Adam Felton, Annika Felton, Per-Ola Hedwall, Maksym Matsala, Mats Niklasson, Lisa Petersson, María Trinidad Torres García.

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Communication

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Cover image: Jens-Peter Skovgaard leads an excursion about noble tree species. PHOTO: TORBJÖRN ESPING

Great reviews for all courses from the students

The students at the department appreciate the teaching, judging by the course evaluations.

"It is very gratifying", says Jörg Brunet, director of institutional studies.

The 18 courses have received very good reviews from the students in the course evaluations, on average 4.6 out of 5. No course has scored lower than 4.0.

In the fall of 2023, a third cohort began studying the Bachelor's program Forest and Landscape, which is a collaboration between the Faculty of Forest Sciences and the LTV Faculty. The three-year program is SLU's first bachelor's degree in English.

It is a popular choice for both international and Swedish students with about half of the students from each group.

Teaching in five grades

As a result, forestry training now takes place over five years at the department, with the first three years in Forest and Landscape and the following two years within the international master's program Euroforester.

"A few years ago we had maybe two courses that ran parallel during one of the four teaching periods of the school year. Nowadays, there can be up to four courses given at the same time", says Jörg Brunet.

Many more of the department's researchers and doctoral students now teach compared to previous years and ensure that the content of the education is kept up-to-date with the most current knowledge from forest research.

"Several teachers once came to Alnarp as Euroforester students and later continued

- The summer course Southern Sweden's forests and landscapes, where students from the new forestry program at the University of Forestry in Umeå come to the south to learn more about the ecology and management of the southern Swedish forests, not least the noble hardwood forests.
- Distance course Forest eco-



Johanna Olsson at the program Forest and Landscape on an excursion outside Vindeln.
PHOTO: MALIN GRÖNBORG.

with doctoral studies", says Jörg Brunet.

Three summer courses

During the past year, the department's teachers also held several other courses:

- Courses within the Master's program Forestry for Green Sustainable Development are given in collaboration with Linnaeus University.

- A summer course for students within the international master's program Sufonama where SLU is one of the partner universities.
- A summer course on Forest Regeneration, as well as a shorter course on forests for land management students.

TORBJÖRN ESPING

Number of PhD-students doubled in four years

31 doctoral students, four of whom received their doctorate. PhD students have doubled since 2019.

In 2023, four doctoral students defended their dissertations (see back cover). The department has now completed 79 dissertations in total.

In October, the department had 31 doctoral students, which is a record.



Delphine Lariviere is one of the four that defended her dissertation in 2023. PHOTO: PER FORNLING

"When I started as director of studies in 2019, we had 15 doctoral students, so there has been steady growth since then", says Annika Felton, director of studies for research education.

During 2023, the department received about 20 MSEK from different research financiers such as Carl Trygger's Foundation, Formas, KSLA, Lars Tirén's donation, Seydlitz MP companies and from various forestry companies and other forestry organisations. Parts of it are to be used for new doctoral projects.

Nine new PhD-students

In 2023, nine new doctoral students started:

- Lukas Graf - Relationships between ungulate density, their forage and damage
- Kinga Stolarek - Seedlings and regeneration procedures for future birch forests

- Anna Karlsson - Co-Creating forest management plans for better accommodation of owner needs and landscape perspective
- Michalina Grabowska - Poplar plantations in a changing climate
- Iida Puurula - Ash as fertilizer for increased biomass production of poplar plantations
- Edzus Romans - Successful regeneration chains
- Sara Jones - Optimization of forest management to reduce fire risk in Swedish forests (sKOBRA)
- Giovanni Bozza - Flowering as a key for the successful development of an efficient and rapid breeding of Silver birch (*Betula pendula*) in Sweden
- Alfred Deutgen - Establishment and management of mixed forests.

TORBJÖRN ESPING

Major investment in attracting new students

The need to communicate increases as the institution grows.

Communicator Per Fornling retired and was replaced by two new positions. Tashina Alavi will work with research communication and student recruitment

Torbjörn Esping will work with press communication.

In December 2023, 76

people were on the institution's payroll.

19 people have been employed at the institution, of which eight are seasonal employees.

Among the new hires are visiting professor Douglass Frederik Jacobs, assistant Head of department Elias

Andersson, and local service technician Nihad Brankovic.



Tashina Alavi.

Turnover 79 MSEK

Growth has been strong in recent years, for example, turnover has increased by 50 percent since 2019. The turnover in 2023 was MSEK 79, 67 MSEK in 2022.

The external funding rate is 60 percent, the rest are grants, with the exception of 5 percent which is commission funded.

The distribution in fundings is in proportion 15 percent to undergraduate education and 85 percent to research.

Temporary decrease in peer-reviewed scientific papers

After a couple of years with a record number of publications, the number decreased in 2023, from 105 to 82 peer-reviewed scientific papers in international journals.

The reduction is hopefully temporary and may be due to researchers spending a lot of time on new courses and the new major research initiatives.

Here is a list of the publications in alphabetical order by main author. The researchers at the Southern Swedish Forest Research Centre, SSV, are marked in bold. If the paper has more than five authors, only the first and last author and the author from the department are listed.

Peer-reviewed scientific papers

In international journals with SSV authors and published in a volume with publication year 2023:

Aldea, J.; ... **Nilsson, U.**; **Holmström, E.**; Huuskonen, S. Evaluation of growth models for mixed forests used in Swedish and Finnish decision support systems. *Forest Ecology and Management* 529.

Allen, M.; Lockwood, J.; ... **Peterson, D.**; ... Jaffe, B. Using surface environmental DNA to assess arthropod biodiversity within a forested ecosystem. *Environmental DNA* 5.

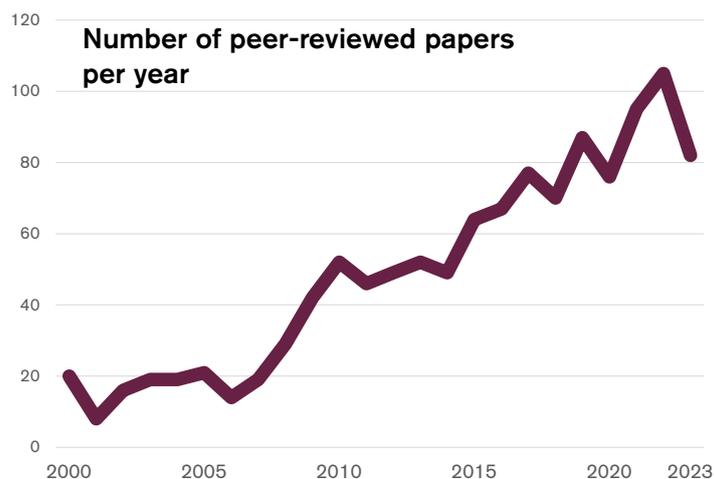
Bakx, T.; **Trubins, R.**; Eggers, J.; Akselsson, C. The effect of spatial and temporal planning scale on the trade-off between the financial value and carbon storage in production forests. *Land Use Policy* 127.

Barhoumi, C.; ... **Drobyshev, I.**; Peyron, O. Temperature and fire controls on vegetation dynamics in Northern Ural (Russia) boreal forests during the Holocene based on brGDGT and pollen data. *Quaternary Science Reviews* 305.

Benigno, A.; ... **Tolio, B.**; ... Linaldeddu, B. Pathogenic fungi and oomycetes causing dieback on *Fraxinus* species in the Mediterranean climate change hotspot region. *Frontiers in Forests and Global Change* 6.

Blomquist, M.; **Cleary, M.**; **Sherwood, P.**; **Pinto, W.**; ... **Marciluniene, D.**; ... **Bakal, I.**; ... **Rönnberg, J.** The potential of biological control against *Heterobasidion* root rot is not realized in practical forestry. *Forest Ecology and Management* 531.

Boakye, E.; ... **Drobyshev, I.**; Girardin, M. Recent decline in sugar maple (*Acer saccharum* Marsh.) growth extends to the northern parts of its distribution range in eastern Canada. *Forest Ecology and Management* 545.



Böhlenius, H.; Öhman, M.; Granberg, F.; Persson, P. Biomass production and fuel characteristics from long rotation poplar plantations. *Biomass and Bioenergy* 178.

Bose, P. Equitable land-use policy? Indigenous peoples? Resistance to mining-induced deforestation. *Land Use Policy* 129.

Brunet, J.; **Felton, A.**; **Hedwall, P.** Vegetation responses to pathogen-induced tree loss: Swedish elm and ash forests revisited after 32 years. *Plant Ecology* 224.

Chang, L.; ... **Cleary, M.**; ... Sun, H. Novel pathogen-plant host interaction: *Colletotrichum jiangxiense* and *Fraxinus americana* L. (White Ash) in a sentinel garden in China. *Plants* 12.

Chen, W.; ... **Tigabu, M.**; ... Zhou, C. Linking microbial decomposition to dissolved organic matter composition in the revegetation of the red soil erosion area. *Forests* 14.

Chu, S.; ... **Jacobs, D.**; Zeng, S. Combined addition of bagasse and zeolite stabilizes potentially toxic elements in sewage sludge compost and improve *Eucalyptus urophylla* seedling growth. *Forest Ecology and Management* 539.

Curtis, K.; **Guillén, L.**; **Brukas, V.** Creating the landscape, one stand at a time: The dual roles of timber buyers in the nested domains of Swedish forestry. *Forest Policy and Economics* 147.

Diaz-Calafat, J.; **Uria-Diez, J.**; **Brunet, J.**; ... **Felton, A.**; ... **Hedwall, P.** From broadleaves to conifers: The effect of tree composition and density on understory microclimate across latitudes. *Agricultural and Forest Meteorology* 341.

Ebrahimi, A.; Sugiyama, A.; Ayala-Jacobo, L.; **Jacobs, D.** Integrative analysis of physiology and genomics provides insights into freeze tolerance adaptations of *Acacia koa* along an elevational cline. *Physiologia Plantarum* 175.

- Francic, I.; ... **Cleary, M.**; ... **Matsiakh, I.**; ... Eschen, R. Climate, host and geography shape insect and fungal communities of trees. *Scientific Reports* 13.
- Gallo, C.; ... **Drobyshev, I.**; ... Blackett, M. Evaluation of CMIP6 model performances in simulating fire weather spatio-temporal variability on global and regional scales. *Geoscientific Model Development* 16.
- Gaytan, A.; **Drobyshev, I.**; Klisho, T.; Gotthard, K.; Tack, A. Parasitism rate differs between herbivore generations in the univoltine, but not bivoltine, range. *PLoS ONE* 18.
- Gossner, M.; ... **Cleary, M.**; ... Eisenring, M. A glimmer of hope – ash genotypes with increased resistance to ash dieback pathogen show cross-resistance to emerald ash borer. *New Phytologist* 240.
- Grelle, A.; **Hedwall, P.**; Strömberg, M.; Håkansson, C.; Bergh, J.. From source to sink–recovery of the carbon balance in young forests. *Agricultural and Forest Meteorology* 330.
- Huang, Z.; ... **Tigabu, M.**; Guo, F. Composition of inorganic elements in fine particulate matter emitted during surface fire in relation to moisture content of forest floor combustibles. *Chemosphere* 312.
- Hulbert, J.; Hallett, R.; Roy, H.; **Cleary, M.** Citizen science can enhance strategies to detect and manage invasive forest pests and pathogens. *Frontiers in Ecology and Evolution* 11.
- Juvany, L.**; **Hedwall, P.**; **Felton, A.**; ... **Johansen, H.**; **Felton, A.** From simple metrics to cervid forage: Improving predictions of ericaceous shrub biomass. *Forest Ecology and Management* 544.
- Kaviriri, D.; ... **Tigabu, M.**; Zhao, X.. Morphological growth performance and genetic parameters on Korean pine in Northeastern China. *Silvae Genetica* 72.
- Larivière, D.**; **Holmström, E.**; **Petersson, L.**; ... Weslien, J.. Ten years after: Release cutting around old oaks still affects oak vitality and saproxylic beetles in a Norway spruce stand. *Agricultural and Forest Entomology* 25.
- Lee, Daesung; **Holmström, E.**; ... **Nilsson, U.**; ... **Aldea, J.**; Huuskonen, S. Current state of mixed forests available for wood supply in Finland and Sweden. *Scandinavian Journal of Forest Research* 38.
- Li, Q.; ... **Tigabu, M.**; Hou, X. Response of soil bacteria of *Dicranopteris dichotoma* populations to vegetation restoration in red soil region of China. *Journal of Soil Science and Plant Nutrition* 23.
- Lin, H.; ... **Tigabu, M.**; Guo, F. Nitrogen allocation in PM2.5 smoke-exposed plants: implications for ecosystem nitrogen cycling and stress response. *Fire Ecology* 19.
- Liu, X.; ... **Tigabu, M.**; Zhao, X. Comparison of genetic impact on growth and wood traits between seedlings and clones from the same plus trees of *Pinus koraiensis*. *Journal of Forestry Research* 34.
- Löf, M.**; **Festini, E.**; **Szydło, M.**; **Brunet, J.** Restoring mixed forests through conversion of Norway spruce stands: effects of fencing and mechanical site preparation on performance of planted beech and natural tree regeneration. *European Journal of Forest Research* 142.
- Londres, M.; **Salk, C.**; ... Tourne, D. Place-based solutions for global social-ecological dilemmas: An analysis of locally grounded, diversified, and cross-scalar initiatives in the Amazon. *Global Environmental Change* 82.
- Mariotti, B.; ... **Böhlenius, H.**; ... Coccozza, C. A global review on innovative, sustainable, and effective materials composing growing media for forest seedling production. *Current Forestry Reports* 9.
- Marshall, J.; ... **Linder, S.**; Peichl, M. Components explain, but do eddy fluxes constrain? Carbon budget of a nitrogen-fertilized boreal Scots pine forest. *New Phytologist* 239.
- Martin, J.**; ... Gil, L. Complexities underlying the breeding and deployment of Dutch elm disease resistant elms. *New Forests* 54.
- Mataruga, M.; ... **Böhlenius, H.**; **Löf, M.** ... Villar-Salvador, P. Monitoring and control of forest seedling quality in Europe. *Forest Ecology and Management* 546.
- Matsiakh, I.**; **Lopez-Garcia, N.**; Kacprzyk, M.; **Cleary, M.** Susceptibility of silver birch and black alder to several *Phytophthora* species isolated from soils in declining broadleaf forests in western Ukraine. *Forest Pathology* 53.
- Matsiakh, I.**; Menkis, A. An overview of *Phytophthora* species on woody plants in Sweden and other Nordic countries. *Microorganisms* 11.
- Myroniuk, V.; ... **Matsala, M.** Combining Landsat time series and GEDI data for improved characterization of fuel types and canopy metrics in wildfire simulation. *Journal of Environmental Management* 345.
- Nordin, P.; Olofsson, E.; **Hjelm, K.** Within-site adaptation: growth and mortality of Norway spruce, Scots pine and silver birch seedlings in different planting positions across a soil moisture gradient. *Silva Fennica* 57.
- Nordlander, G.; ... **Hjelm, K.** Trap catch data are poor predictors of damage caused by pine weevil (*Hylobius abietis*) to conifer seedlings. *Forest Ecology and Management* 537.
- Ogana, F.**; **Holmström, E.**; Sharma, R.; Langvall, O.; **Nilsson, U.** Optimizing height measurement for the long-term forest experiments in Sweden. *Forest Ecology and Management* 532.
- Osei, R.; ... **Löf, M.**; ... Ponette, Q. Climatic water availability modifies tree functional diversity effects on soil organic carbon storage in European forests. *European Journal of Forest Research* 142.
- Paudel, I.; Rose, K.; Landhäusser, S.; **Jacobs, D.** Co-limitation of resources reveals adaptations of a tropical tree to heterogeneous environments along an elevational cline. *Frontiers in Forests and Global Change* 6.
- Peterson, D.**; ... **Cleary, M.** Specificity and Sensitivity of a Rapid LAMP Assay for Early Detection of Emerald Ash Borer (*Agrilus planipennis*) in Europe. *Forests* 14.
- Peterson, D.**; ... **Kaya, S.**; ... **Cleary, M.** Development of novel LAMP and qPCR assays for rapid and specific identification of Bronze birch borer (*Agrilus anxius*). *Environmental DNA* 5.
- Petersson, L.**; **Larivière, D.**; **Holmström, E.**; **Lindblad, M.**; **Felton, A.** Potential implications of shortened rotation length for forest birds, bryophytes, lichens and vascular plants: An example from southern Swedish production forests. *PLoS ONE* 18.

- Pretzsch, H.; ... **Löf, M.**; ... del Rio, M. Mortality reduces overyielding in mixed Scots pine and European beech stands along a precipitation gradient in Europe. *Forest Ecology and Management* 539.
- Ranius, T.; ... **Felton, A.**; ... Öckinger, E. Protected area designation and management in a world of climate change: A review of recommendations. *AMBIO: A Journal of the Human Environment* 52.
- Raymond, P.; **Löf, M.**; ... Puetzman, K. Chapter 15 – Silviculture of Mixed Species and Structurally Complex Boreal Stands. In: *Boreal Forests in the Face of Climate Change*. Advances in Global Change Research 74. Montoro G.M., Morin H., Gauthier S. (Eds). *Springer Nature, Switzerland*.
- Reventlow, D.; Nord-Larsen, T.; Sørensen, H.; **Skovsgaard, J.** Effects of Norway spruce shelter density and soil scarification method on mortality and height growth of underplanted European beech, European silver fir and Douglas fir. *Forestry: An International Journal of Forest Research* 96.
- Riit, T.; **Cleary, M.**; Adamson, K. Oomycete soil diversity associated with *Betula* and *Alnus* in forests and urban settings in the Nordic-Baltic region. *Journal of Fungi* 9.
- Rosa, E.; ... **Felton, A.**; Forsell, ... Hellweg, S. Can forest management practices counteract species loss arising from increasing European demand for forest biomass under climate mitigation scenarios? *Environmental Science and Technology* 57.
- Sanczuk, P.; ... **Brunet, J.**; ... **Hedwall, P.**; ... **Uria-Diez, J.**; ... De Frenne, P. Microclimate and forest density drive plant population dynamics under climate change. *Nature Climate Change* 13.
- Segtovich, A.**; Huuskonen, S.; Fahlvik, N.; **Holmström, E.** Select or Not? Comparing the impact of selective and schematic thinning on Scots pine tree growth and stand structure. *Forests* 14.
- Serge, M. A.; ... **Lindbladh, M.**; ... Zernitskaya, V. Testing the effect of relative pollen productivity on the REVEALS model: A validated reconstruction of Europe-wide Holocene vegetation. *Land* 12.
- Skovsgaard, J.**; Johansson, U. Englund, J.; **Juravle, S.** Walnut in Sweden: effects of nurse trees, weed control and fertilization on five-year survival and growth of planted *Juglans x intermedia* NG23 and NG38. *Scandinavian Journal of Forest Research* 38.
- Spinu, A.; **Mysiak, W.**; Bauhus, J.; Bielak, K.; **Niklasson, M.** Pioneer tree species accelerate restoration of tree-related microhabitats in 50-year-old reserves of Bialowieza Forest, Poland. *Ecology and Evolution* 13.
- Spitzer, R.; ... **Felton, A.**; ... Rolandsen, C. Coprophagy in moose: A first observation. *Ecology and Evolution* 13.
- Spitzer, R.; ... **Felton, A.**; ... Widemo, F. Macro-nutritional balancing in a circumpolar boreal ruminant under winter conditions. *Functional Ecology* 37.
- Sutheimer, C.; ... **Drobyshev, I.**; ... Radeloff, V. Climate forcing of regional fire years in the upper Great Lakes Region, USA. *International Journal of Wildland Fire* 32.
- Svensson, C.; ... **Forsmark, B.**; **Nilsson, U.**; ... Bergh, J. Early and repeated nutrient additions support far greater stemwood production in Norway spruce than traditional late-rotation fertilisation. *Forest Ecology and Management* 549.
- Svensson, C.; Bader, M.; **Löf, M.**; Johansson, U.; Bergh, J. Fertilisation and irrigation have no effects on growth of oak (*Quercus robur*, *Q. petraea*) stands on abandoned farmland in southwest Sweden. *Forest Ecology and Management* 529.
- Szubska, M. a.; ... **Zin, E.** Advantages and limitations of an interdisciplinary approach in woodland archaeology: An example of 18th-19th century tar production in European temperate forest. *Quaternary International* 659.
- Thyroff, E.; ... **Jacobs, D.** Co-planting of a fast-growing, nitrogen-fixing host tree facilitates regeneration of the root hemiparasitic 'iliahi (Hawaiian sandalwood). *Forest Ecology and Management* 542.
- Trubins, R.** Trade-offs in ecosystem services: Clarifying concepts and measuring severity within the production possibility frontier framework. *Sustainability* 15.
- Tubby, K.; ... **Cleary, M.**; ... Mullett, M. The increasing threat to European forests from the invasive foliar pine pathogen, *Lecanosticta acicula*. *Forest Ecology and Management* 536.
- Ulvdal, P.; Öhman, K.; **Eriksson, O.**; Staal Wästerlund, D.; Lämås, T. Handling uncertainties in forest information: the hierarchical forest planning process and its use of information at large forest companies. *Forestry: An International Journal of Forest Research* 96.
- van der Nest, A.; ... **Sadikovic, D.**; ... Barnes, I. Population structure and diversity of the needle pathogen *Dothistroma pini* suggests human-mediated movement in Europe. *Frontiers in Genetics* 14.
- Villalobos, A.**; ... **Löf, M.** Predator odor can reduce acorn removal by granivorous rodents in mixed oak forest stands. *Forest Ecology and Management* 548.
- Vospertnik, S.; ... **Aldea, J.**; ... **Löf, M.**; ... Wolff, B. Tree species growth response to climate in mixtures of *Quercus robur*/*Quercus petraea* and *Pinus sylvestris* across Europe- a dynamic, sensitive equilibrium. *Forest Ecology and Management* 530.
- Wang, L.; ... **Tigabu, M.**; ... Li, M. Rhizosphere soil nutrients and bacterial community diversity of four broad-leaved trees planted under Chinese fir stands with different stocking density levels. *Frontiers in Forests and Global Change* 6.
- Wang, S.; ... **Tigabu, M.**; ... Zhou, C. Soil microbial community, dissolved organic matter and nutrient cycling interactions change along an elevation gradient in subtropical China. *Journal of Environmental Management* 345.
- Wei, L.; ... **Brunet, J.**; ... De Frenne, P. Impact of patch age and size on forest soil characteristics in European agricultural landscapes. *Science of the Total Environment* 898.
- Wei, M.; ... **Tigabu, M.**; ... Guo, F. Impact of forest fire on radial growth of tree rings and their element concentrations of *Pinus sylvestris* and *Larix gmelinii* in northern China. *Frontiers in Forests and Global Change* 6.

fortsättning vetenskapliga artiklar:

Widén, A.; ... **Felton, A.**; ... Widemo, F. Direct and indirect effects of food, fear and management on crop damage by ungulates. *Ecological Solutions and Evidence* 4.

Wright, G.; **Salk, C.**; ... Zerriffi, H. Conformity and tradition are more important than environmental values in constraining resource overharvest. *PLoS ONE* 18.

Xu, R.; ... **Tigabu, M.**; ... Li, M. Intraspecific variations in leaf functional traits of *Cunninghamia lanceolata* provenances. *BMC Plant Biology* 23.

Yang, S. ... **Tigabu, M.**; ... Guo, F. Investigating Drought events and their consequences in wildfires: An application in China. *Fire* 6.

Youssef, K.; **Dambrauskaite, M.**; Witzell, J.; **Rönnerberg, J.** Survey study reveals high prevalence of *Heterobasidion* root rot infection in Scots pine (*Pinus sylvestris*) stands established on seemingly low-risk sites. *Forests* 14.

Zhan, X.; ... **Tigabu, M.**; Guo, F. Temporal and spatial dynamics in emission of water-soluble ions in fine particulate matter during forest fires in Southwest China. *Frontiers in Forests and Global Change* 6.

Other scientific publications 2023

Bose, P. Films as human rights: through the lens of Indigenous Peoples' Forest food. Book chapter in: Applied Human Rights, Brill.

Brunet, J. Generell naturvårdshänsyn i hyggesfritt skogsbruk i Mellaneuropa: en litteraturoversikt. Future Forests Rapportserie.

Cromsigt, J.; ... **Felton, A.**; ... Widén, A. Adaptiv sam- och flerartsförvaltning av klövvilt. Rapport, Naturvårdsverket.

Eriksson, O.; Johansson, U.; **Subramanian, N.** A comparison of the ForestMan AI software with the Heureka system regarding forest growth simulations and carbon calculations. Arbetsrapport, Institutionen för sydsvensk skogsvetenskap.

Fredriksson, E.; **Fahlvik, N.**; Öhlund, J.; Svennerstam, H+. Produktionsnedsättning i törskateangripen gallringsskog: En ekonomisk analys i Heureka. Arbetsrapport Skogforsk.

Doctoral theses 2023

Amsten, Karin. Fire and herbivory – key drivers of temperate open ecosystems: Effects of consumer control on woody and herbaceous plant communities in temperate wood-pasture.

Juvany Canovas, Laura. The puzzle of forestry and cervid interactions: a missing piece is in the understory.

Lariviere, Delphine. Old trees in young forests: Biodiversity management in planted conifer forests in southern Sweden.

Youssef, Khaled. Heterobasidion root rot infections on Scots pine: A cryptic threat to sustainable forest management in Sweden.



SCIENCE AND
EDUCATION **FOR**
SUSTAINABLE
LIFE