

Forest Alnarp

Institutionen för sydsvensk skogsvetenskap

Record numbers PhDs, students and publications



Annual report

2022

Researcher Annika Felton on an excursion with students in the Euroforester master's program. She is also the director of PhD studies.

This year, the department grew considerably. The Forest and Landscape bachelors program began its second year, with a large applicant pool. This contributed to the department having well over 100 students in 2022.

There was also a record number of PhD students thanks to extensive new research projects.

More resources for research

In last year's annual report, I wrote that "it will be wonderful when we meet properly on campus again." And yes, what a boost it is for workplace morale and a collaborative climate that we can meet in Alnarp again after the pandemic! We are now working to find the right balance between on site and remote work.

2022 saw big successes in external funding. From the special Formas call on new types of forestry we were fortunate to get three large projects funded.

The department has also received funding from a succession of other foundations, agencies and corporations. It will be a fantastic platform for new and interesting research and new partners.

Many hours of hard and goal-oriented work were behind each successful application, and without all our obedient workers we

would not have succeeded.

With the help of external funding we now employ 23 promising PhD students. It will be exciting to follow their journeys in the coming years.

It is extremely fun to work with PhD students who are enthusiastically tackling their projects. Their enthusiasm infects our senior employees.

To guide and shape the working environment for young researchers is a big responsibility. Finding a good balance between starting new projects and still offering high-quality tutoring to ongoing PhD and postdoctoral projects will be an urgent challenge in 2023.

New projects and workers have burdened our well-functioning administrative and support staff who must pull a heavy load.

Happily we have been able to recruit a new communicator and accountant into our

administration.

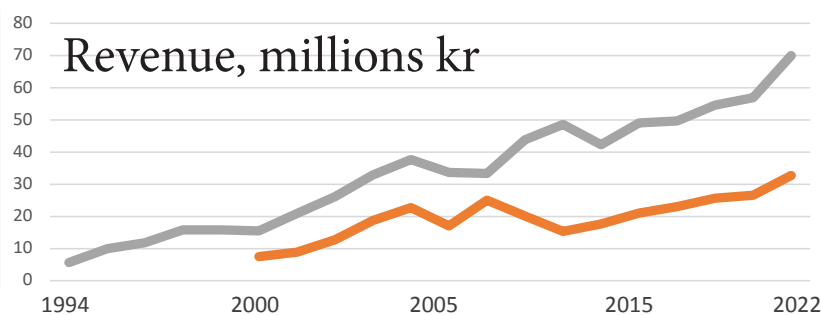
In 2022 we have taught more than ever. Our programs and courses are popular and receive excellent evaluations.

It is a challenge to take on so much teaching. We are working on our internal structure and collaboration with other faculties in Alnarp and we need to continue recruiting new researchers and teachers.

I will close with by highlighting all our competent workers who were the key to 2022's successes.



Prefect Magnus Löf.



The grey line shows how revenues have grown from 1994 onwards. The orange line shows the amount of research funding from research foundations, corporations and other sources.



Three workers retired in 2022 after many years of good effort at the department. Kent Hansson, Per Odén and Matts Lindblad. Matts continues to do research and teach part time.

Nyhetsbrevet



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Vice prefect: Giulia Attocchi

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Giulia Attocchi: Euroforester
Annika Felton: PhD education

Euroforester coordinator

Andis Zvirgzdins

Assist prefect for research

Michelle Cleary

Assist prefect basic education

Jörg Brunet

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Karin Hjelm
Emma Holmström
Mikolaj Lula
Magnus Löf
Urban Nilsson
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Michelle Cleary
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Iryna Matsiakh
Donnie Peterson
Jonas Rönning
Dusan Sadikovic
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Educational offerings reach new heights

In 2022 we educated over 100 students, a new departmental record.

– It is really great. To share knowledge and experiences with students is a central part in our mandate as a university.

– Sometimes we tend to overestimate the importance of individual new research results. From a societal

perspective, student learning in our courses and programs often has a bigger long-lasting impact, says Jörg Brunet.

Most of all, the Forest and Landscape program has contributed to the deluge of new students. Its second year began in 2022, and 2023 will see a third cohort, so we are primed for another enrolment record.

– After several years of

expansion we probably need to consolidate our educational offerings. We must gather strength and focus on handling all the new students. It is a financial challenge and more people are getting involved in teaching.

In 2022, the department took part in the following programs:

- ✓ The Euroforester master's program
- ✓ The Multiple-use Forestry master's program in cooperation with Linnaeus University
- ✓ The Forest and Landscape bachelor's program
- ✓ The southern trip, five weeks for forestry students from Umeå
- ✓ The distance course Forest ecology and Forestry for sustainable forest management
- ✓ The forest regeneration master's course
- ✓ A shorter course about forests for forest owners

Financing for education ultimately comes from government appropriations that are distributed within the faculty. First priority goes to students in degree programs. Running independent courses is tougher.

– In contrast to research, there is little financing from other sources. Scholarships to Euroforester students are a huge asset for us. Last year Ikea, Skogssällskapet and SCA funded scholarships. We also got a welcome contribution of 722,000 SEK from the Seydlitz MP company foundation.

– For teachers, we have some new hiring underway, and ever more researchers are getting involved in education. This is really fun for several reasons. We are on the way to raising teaching in the department to a new level, says Brunet.



Jörg Brunet is assistant prefect for basic education and has overall responsibility for the department's educational offerings

A new way into the forest

After Forest and Landscape the door is open to go further with Euroforester.

The bachelor's program is a boundary-crossing collaboration between the Forestry and Landscape Architecture faculties. After their education, both alternatives are open for students.

– Those who choose the forest path can deepen their education in the Euroforester program and get education at the master of forestry level. It is yet to be seen how many will do so. We will have an indication in 2023 when the third-year students write their bachelor's theses. Their choice is between forestry and landscape architecture, says director of studies Karin Hjelm.

Of course some will choose to go directly into the job market. And by the way, there are no fine lines between disciplines, which is a strength of the

program.

– Compared to traditional forestry education, Forest and Landscape has a slightly different profile. It is about the many benefits of forests. Sometimes timber production takes centre stage, while in other cases outdoor recreation and biodiversity are the goal. Students have different backgrounds and paths into the forest which leads to exciting group discussions.

Karin Hjelm is the director of studies for the Forest and Landscape bachelor's program and the Multiple-use forestry master's program.



A record number of EU scholarships

Recruitment of students to the Euroforester master's program has broadened.

At the beginning of the 2000s nearly all of the participants came from the Baltic countries and Poland.

Later, the circle expanded. "Last year we had a record number of Sufonama students, which is really fun," says Giulia Attocchi.

"They come from countries outside the EU and are supported with EU scholarships. Eventually it will even be possible for EU citizens to receive scholarships."

Giulia Attocchi director of studies for the Euroforester program.



Already when the forestry operations in Alnarp were established, training for future forest managers was included during the southern part of the Swedish journey. In 2022, it was an extra challenge for course leader Per-Ola Hedwall to get the organization together.

Since the trip in the previous years was made impossible by the pandemic, it became a double trip with 96 participants, during one week at Tönnersjöheden's and Asa experimental park, plus three weeks in Degeberga. It was the last compulsory trip. In 2023, it transitions into a voluntary summer course about southern Sweden's forests and landscapes.

A great leap forward for research...

In November the funding agency Formas decided on financing of strategically important projects. A lot of money went to forest research in Alnarp

– You can see it as evidence that we are on the cutting edge. Our strengths include a breadth of research areas, says Michelle Cleary. She is the assistant prefect with overall responsibility



Michelle Cleary

for strategic development of research, which especially involves work with research grants.

In 2022 work was in full swing to build a centre of competence for fast-growing broadleaves, the single biggest project in the department's history.

There were several considerable research grants awarded this year.

The biggest were:

√ Diversifying forests to

ensure their resilience and multifunctionality: 10 million SEK from Formas.

√ New methods for more diversified and broadleaf-dominated continuous-cover forestry: 10 million SEK from Formas.

√ Co-creation of extension services and planning for diversified silviculture in family forests: 10 million SEK from Formas.

√ Efficient value chains through ash fertilization of fast-growing broadleaves: 5 million SEK from the Swedish Energy Agency.

√ Wetland forests' restoration

benefits to biodiversity and carbon sinks: 4 million SEK from Formas.

– In shaping sustainable future forestry, many of our competencies overlap, from production and ecology to climate, damage risks and forest planning. We have it all."

– Another strength is that we have a tradition of working closely with the forest sector and putting results into practical use, says Michelle Cleary

...and many PhD students

This year the number of PhD students grew to 23. That is a new record, reflecting our growth in research

On average three people per year have defended PhDs at the department.

If the high number of PhD students continues, the number of defences is on the road to doubling.

Annika Felton is the director of PhD studies. That means she has an overarching responsibility for the PhD students, which concerns everything from ensuring that daily work goes smoothly to improving the overall work environment.

– It is great that we have so many PhD students, even though it also means more work. Such a large group makes for a good community and exchange of experiences in a completely different way than if there were only a few people," says Felton.

At least once a year Felton has individual meetings with every PhD student and their supervisor. In addition there are career discussions, orientation for new students, help with individual study plans and many other things.

– We have seminars and social activities, which can be

something like a group trip. We are reviewing our strategy to become even better.

This year it was clarified that PhD students who teach will be paid for their work.

– It is great that we now have clear and simple rules. We have always encouraged participation in teaching in our educational programs, but rules for payment have been unclear. Now I hope even more will try teaching. This is partly for career development, and partly because we need more teachers, says Felton.

A total of 75 PhDs have been defended in the department, and now these students are on track to increase that number:

Karin Amsten

Grazing and fire – key processes for tree and flowering plant succession

Delphine Laviviere

Thinning as a tool for biodiversity

Khaled Yousef

Heterobasidion root infections on Scots pine – a cryptic threat to sustainable forest management

Laura Juvany Canovas

The puzzle of forestry and ungulate interactions – a missing piece is in the understory



This year Mikolaj Lula defended a dissertation about regeneration of pine and Mostarin Ara defended a dissertation on thinning.

Noelia Lopez-Garcia

Forest Phytophthora – ecology, diversity and management

Axelina Jonsson

Forest regeneration models for planted, direct seeded and natural regenerated stands

Ida Nordström

Rapid and portable tools for early detection of invasive alien tree pests and pathogens

Amanda Segtowich

Silviculture of Scots pine and thinning strategies

Joan Diez Calafat

Deciphering the interactions between trees and climate on forest ecosystem processes

Tatiana Klislo

Climatic controls of forest fire activity in Europe

Andis Zvirgzdins

Establishment and management of planted birch in Sweden

Keeli Curtis

Instrumentation of the Swedish Forest Policy with a focus on advisory services

Nora Pohl

Managing stand structure to restore mixed oak-dominated forests for conservation of biodiversity



Therese Strömvall Nyberg

Etablering och skötsel av blandbarrskog

Emily Delin

Forest growth models adapted to abiotic and biotic disturbances

Luca Moraro

Poplar plantations on forest land – effect of genotypes and soil treatments.

Mimmi Blomqvist

Optimized stump treatment against Heterobasidion for sustainable future forests

Beatrice Tolio

Advanced Phenotyping Tools for Genetic Gain in Tree Breeding: Ash dieback in focus

Matej Domevcik

Artificial regenerations for future climate

Derek Garfield

System innovations to promote fast growing broadleaves

Sezer Kaya

Current and future risks to future productivity and quality of fast-growing broadleaves

Ola (Babatunde) Dosumu

Silviculture and modelling of Silver birch

Jaime Luna

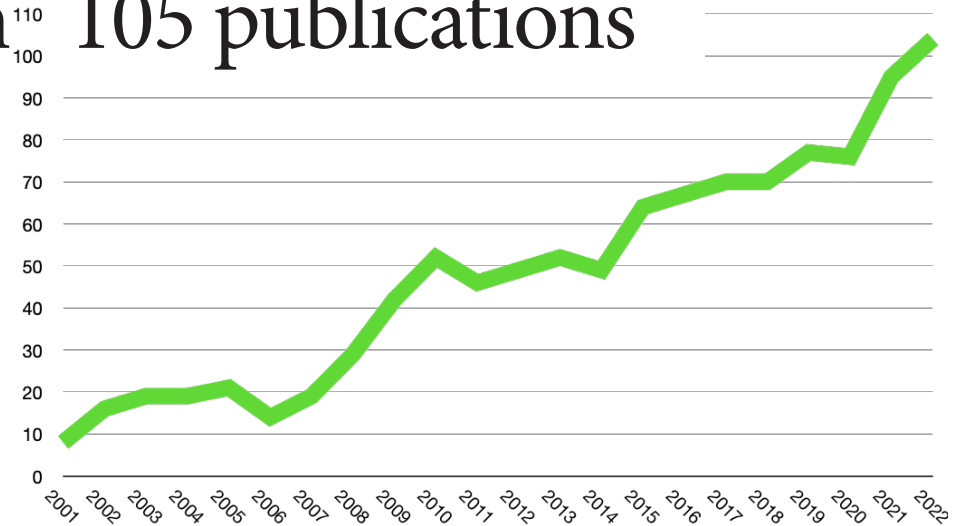
The biodiversity implications of short-rotation broadleaved trees

Record again 105 publications

The positive trend in the number of publications continues with a new high.

In 2022, the department's researchers contributed 105 peer-reviewed scientific articles to international journals.

Here is a list of the publications in alphabetical order by first author. Authors from the department in Alnarp are in bold type. If the article has more than 10 authors, only the first and last are listed, plus any other authors from the department.



Aldea, J.; ... **Löf, M.** Timing and duration of drought modulate tree growth response in pure and mixed stands of Scots pine and Norway spruce. *Journal of Ecology*.

Annighöfer, P.; ... **Löf, M.**; ... Bauhus, J. Examination of aboveground attributes to predict belowground biomass of young trees. *Forest Ecology and Management*.

Ara, M.; Barbeito, I.; Kalén, C.; **Nilsson, U.** Regeneration failure of Scots pine changes the species composition of young forests *Scandinavian Journal of Forest Research*.

Ara, M.; Berglund, M.; Fahlvik, N.; Johansson, U.; **Nilsson, U.** Pre-commercial thinning increases the profitability of Norway spruce monoculture and supports Norway spruce-birch mixture over full rotations. *Forests*.

Ara, M.; **Felton, A.M.**; **Holmström, E.**; **Petersson, L.**; Berglund, M.; Johansson, U.; **Nilsson, U.** Pre-commercial thinning in Norway spruce-birch mixed stands can provide abundant forage for ungulates without losing volume production. *Forest Ecology and Management*.

Bergqvist, G. Harvest bag composition differs among hunting methods for wild boar in Sweden. *European Journal of Wildlife Research*.

Blasko, R.; **Forsmark, B.**; Gundale, M.J.; Lim, H.; Lundmark, T.; Nordin, A. The carbon sequestration response of aboveground biomass and soils to nutrient enrichment in boreal forests depends on baseline site productivity. *Science of the Total Environment*.

Boakye, E.A.; Houle, D.; Bergeron, Y.; Girardin, M.P.; **Drobyshev, I.** Insect defoliation modulates influence of climate on the growth of tree species in the boreal mixed forests of eastern Canada. *Ecology and Evolution*.

Chavardès, R.D; Danneyrolles, V.; Portier, J.; Girardin, M.P.; Gaboriau, D.M.; Gauthier, S.; **Drobyshev, I.**; Cyr, D., Wallenius, T.; Bergeron, Y. Converging and diverging burn rates in North American boreal forests from the Little Ice Age to present. *International Journal of Wildland Fire*.

Crawford, E.; Leidenberger, S.; Norrström, N.; **Niklasson, M.** Using Video Footage for Observing Honey Bee Behaviour at Hive Entrances. *Bee World*.

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de Streef, G.; ... **Löf, M.**; ... Ponette, Q. Regional climate moderately influences species-mixing effect on tree growth-climate relationships and drought resistance for beech and pine across Europe. *Forest Ecology and Management*.

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Demetriou, J.; **Díaz-Calafat, J.**; Kalaentzis, K.; Kazilas, C.; Georgiadis, C.; Turrisi, G.F.; Koutsoukos, E. The alien Black-and-yellow Mud Dauber, *Sceliphron caementarium* (Drury, 1773) (Hymenoptera, Sphecidae), continues its spread: new citizen-science records from Eastern Europe and the Balkans. *Check List*.

Dimitrova, A.; ... **Böhlenius, H.**; ...Montagnoli, A. Risks, benefits, and knowledge gaps of non-native tree species in Europe. *Frontiers in Ecology and Evolution*.

Dorado-Linan, I.; ... **Drobyshev, I.**; ... Trouet, V. Jet stream position explains regional anomalies in European beech forest productivity and tree growth. *Nature Communications*.

Drobyshev, I.; Bergeron, Y.; Ryzhkova, N.; Kryshen, A. Scandinavian forest fire activity correlates with proxies of the Baffin Bay ice cover. *Forests*.

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Felton, A.; **Felton, A.M.**; ... **Löf, M.**; **Lindbladh, M.**; **Cleary, M.**; **Niklasson, M.**; **Petersson, L.**; **Rönnberg, J.**; ... **Hedwall, P.-O.** Forest biodiversity and ecosystem services from spruce-birch mixtures: The potential importance of tree spatial arrangement. *Environmental Challenges*.

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- Malkamaki, A.; ... **Bernö, H.;** ... Zellweger, J. Public perceptions of using forests to fuel the European bioeconomy: findings from eight university cities. *Forest Policy and Economics*.
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production in the Helge å catchment: a comparative analysis. *Ecosystems and People*.

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Margolis, E.Q.; ... **Drobyshev, I.**; ... Weisberg, P.J. The North American tree-ring fire-scar network. *Ecosphere*.

Mariscal, A.; **Tigabu, M.**; Savadogo, P.; **Odén, P.C.** Regeneration status and role of traditional ecological knowledge for cloud forest ecosystem restoration in Ecuador. *Forests*.

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