



IPC News

*Newsletter of the International Commission on Poplars and Other
Fast-Growing Trees Sustaining People and the Environment*



Issue N° 11, August 2021

Note from the Editorial Board

Dear Readers,

Welcome to the newsletter of the International Commission on Poplars and Other Fast-Growing Trees Sustaining People and the Environment (IPC). After a break in publication due to the recent reform of IPC, you may notice that the newsletter has undergone a few changes – namely a more succinct format and the inclusion of inputs on all fast-growing trees, rather than just poplars and willows. We hope that you enjoy the new look and we welcome your feedback.

Below, you will find information on international events and publications hosted by the National Commissions of IPC, as well as other events of interest related to the production of and research into poplars and other fast-growing trees. This bulletin also informs and reviews the main activities of IPC and other organizations and circulates useful information to the community working on fast-growing trees. In addition, it contains a selection of publications of various types, including papers, abstracts, books and new reference works.

We invite you to participate by submitting your articles, papers, research reports, interviews and other materials. Please send contributions to IPC-Secretariat@fao.org.

Kind regards,

The Editorial Board

The future of IPC

Central article in the 11th issue of the newsletter of the International Commission on Poplars and Other Fast- Growing Species Sustaining People and the Environment

FAO works in the agriculture sector (including forestry and fisheries) to make agricultural production, the environment, people's nutrition, and people's lives better. This is what we call the four betters in FAO; and we are constantly adapting our approaches in order to achieve those goals in different contexts. Just as FAO is evolving to meet today's challenges, so too is the International Commission on Poplars and Other Fast-Growing Species Sustaining People and the Environment, or IPC. IPC seeks to improve the management of fast-growing trees to make forest production, the rural and urban environment, and people's livelihoods better. The decision by IPC Members in 2019 to change the IPC Convention, incorporating work on additional species of trees, opens up new scope and new geographies for IPC. This year, IPC will have its first quadrennial session since the change to its Convention. The session will thus be important, as it will be the initial opportunity for IPC to discuss how to accomplish the new work agreed in 2019.

To date, IPC has been able to facilitate the use of poplars and willows to improve production and income, restore and reclaim degraded land, and make our cities more healthy and beautiful. IPC has done this by fostering collaboration between people from different regions of the world, and people with different specializations. In the first case, IPC has been able to encourage cross-continent collaboration and exchange of innovations in forestry, by enabling exchanges between forest scientists from different countries. Second, applied forest scientists and policy-makers meet through IPC. Policy-makers are afforded the chance to see working solutions demonstrated by applied scientists, and thus to design policies to foster the adoption of these solutions. These kinds of successful approaches should be maintained and taken forward. At the same time, IPC needs to critically assess what it can do differently and better to deliver for its Members and our world.

The IPC Executive Committee and Secretariat are preparing a new strategy, demonstrating how IPC can contribute to the UN's Decade of Action for the Sustainable Development Goals. As articulated in that draft strategy, by embracing change, conducting its work with ambition and energy, and working efficiently and effectively, IPC will contribute not only to its Members' goals and to the goals of FAO and the United Nations, but also to the shared aspirations of our families, communities and countries. This strategy will be proposed to the IPC Members in the next IPC session, where the IPC Executive Committee and Secretariat will receive IPC Members' guidance in order to make the most effective start under this new mandate.

I hope that IPC keeps up its promising work this year and in the years to come, and I look forward with anticipation to the IPC session. Thank you.



Mette L. Wilkie
Director, Forestry Division
Food and Agriculture
Organization of the
United Nations (FAO)

IPC in the coming decade

Editorial article in the 11th issue of the International Commission on Poplars and Other Fast-Growing Trees Sustaining People and the Environment

At a time when action on pressing global issues such as climate change, biodiversity loss and food security for all is urgently needed, the sustainable management of trees is an increasingly important element in our progress towards a more sustainable and inclusive future. In order to respond to the evolving needs of our global context, in 2019 the International Commission on Poplars and Other Fast-Growing Trees Sustaining People and the Environment (IPC) broadened its scope beyond poplars and willows to include the sustainable management of fast-growing trees globally. The 26th Session of IPC, to be held in October 2021, represents a key moment in putting our expanded mandate into action. As crucial components of forestry and agricultural systems worldwide, fast-growing trees have significant potential to contribute to both the Global Forest Goals and the Sustainable Development Goals. IPC's knowledge base, developed through an international community of poplar and willow experts, can be shared globally and expanded to other fast-growing tree species. The expanded strategy of IPC implies more functions, a broader geographical, biological and technical scope, and an emphasis on working within the framework of international cooperation in FAO. As such, IPC will function as a knowledge and capacity-building network and as a science-policy-implementation platform, converting science-based approaches into practice.

As Chairperson of IPC, it is my pleasure to outline how the reform will offer new opportunities for cross-sectoral collaboration, international cooperation, and global contributions in working towards sustainable forestry and agricultural systems. Based on IPC's expanded core mission

“to improve livelihoods and facilitate production of ecosystem goods and services by fostering the sustainable management of fast-growing trees”, we defined four overarching objectives for its work with fast-growing trees until the year 2030: 1) to foster innovation; 2) to establish good practice; 3) to take good practice to scale; and 4) to deepen partnerships and cooperation, to more effectively deliver our work. With these overarching goals in sight, IPC aims to make a significant contribution to the 2030 Agenda and the associated Global Forest Goals, the UN Decade for Family Farming, and the UN Decade on Ecosystem Restoration. For instance, the UN Decade for Family Farming, jointly led by FAO and the International Fund for Agricultural Development, underscores the importance of family farmers in food security, livelihoods, the sustainable management of natural resources and environmental protection in rural areas. Since the planting of fast-growing trees is an integral part of many family farms around the world, the IPC network can provide specific technical advice and capacity-building in farm forestry.

A major working theme of an IPC with an expanded mandate still lies in the area of genetics and health of fast-growing species, based on many years of proven research work. Other areas of work include the bioeconomy, as the potential of developing bioproducts from fast-growing trees is increasing at a fast pace, and worldwide transfer of knowledge and techniques to this end are essential. IPC aims to address the need for generating and connecting knowledge to action at the interface of markets, products, policies and forest resources. With regards to resilience to climate change and ecosystem services, IPC technically and scientifically supports the restoration of degraded forests and deforested landscapes, agroforestry and other tree-based measures to protect soil, water and biodiversity. Furthermore, the expanded IPC works closely with local people to restore and manage landscapes by using fast-growing trees, so that they can meet their present and future needs. To improve enabling conditions for local people, IPC unfolds the relationship between tree breeding and conservation of genetic pools, landscape protection, biodiversity, food and livelihoods.

There is great potential for collaboration, knowledge sharing, and capacity-building in all these domains and we look forward to contributions from all. The overarching objectives of IPC and the UN are reinforced through broad cooperation across research, policy and practice. Therefore, our reform brings even more opportunities for collaboration and participation from a diversity of expertise and perspectives. Building on existing expertise from our base of member countries and from countries where other fast-growing trees are already utilized, creating spaces for the fostering of innovation, and scaling up solutions in a sustainable manner are all crucial components of this important work.

It is thus with great enthusiasm and confidence that I look towards the future of IPC, particularly the 26th Session in October of this year. Since the IPC community last met in 2016, a wealth of information and experiences about fast-growing trees, forestry and ecology has emerged and represents a crucial resource from which new innovations and applications will surely emerge. As such, the theme of the 26th Session of IPC was chosen as: ‘The role of Salicaceae and other fast-growing trees in economic recovery, sustainable wood supplies and climate change mitigation’, in order to contribute to global action on sustainable agriculture and forestry. I anticipate highly fruitful discussions at the session, which will further substantiate the opportunities offered by fast-growing trees in addressing today’s global challenges.



Martin Weih

Chairperson

International
Commission on Poplars
and Other Fast-Growing
Trees Sustaining People
and the Environment

Past events

29th Montreal Process Working Group meeting, 9–10 December 2020, Buenos Aires

The [Montreal Process Working Group](#) on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests held its 29th meeting in Buenos Aires on 9–10 December 2020. The event brought together 36 participants from 10 Montreal Process countries (Argentina, Australia, Canada, China, Japan, New Zealand, Republic of Korea, Russian Federation, the United States of America and Uruguay). Over the course of the two-day conference, Argentina presented on forest management with integrated livestock technical indicators, and efforts to integrate livestock farming with forests. Canada provided an update on a new commitment by the federal government to plant 2 billion trees over the next 10 years. China gave details of the New Forest law and the attention it places on the environmental benefits of forests, while Japan provided an update on the state of sustainable forest management in that country. Also presented was the work of the Technical Advisory Committee on the impact of the COVID-19 pandemic on temperate and boreal forest and its work in collaboration with the FAO Global Forest Resources Assessments team.

Upcoming events

26th Session of IPC, 5–8 October 2021

The [26th Session of IPC](#) will take place on 5–8 October 2021, and for the first time IPC will hold its quadrennial session virtually. IPC has chosen the theme as ‘The role of Salicaceae and other fast-growing trees in trees in economic recovery, sustainable wood supplies and climate change mitigation’, in view of the current challenges in moving towards green, bio-based and climate-smart economies and the opportunities

offered by fast-growing trees to contribute to these developments. The event will include live interactions during the formal session of Members, as well as technical presentations and side events relevant to IPC. Technical presentations and posters will be hosted online and live discussions organized with the authors. IPC National Commissions are invited to send the names and affiliations of their representatives to the session, and representatives’ alternates, to IPC-Secretariat@fao.org. The session will be convened under the provisions of Article XIV of the FAO Constitution and will be open to all Members of the Commission and to observers.

Committee on Mediterranean Forestry

[The Committee on Mediterranean Forestry Questions-Silva Mediterranea](#) and the 7th Mediterranean Forest Week will be held on 25–29 October 2021, in Turkey.

News

France will monitor poplar plantations using new remote sensing images from satellites

[The ProPopulus group](#) has announced that the National Poplar Council (CNP) has launched a satellite remote sensing research programme to conduct annual mapping of poplar plantations and exhaustive monitoring of their status and evolution in France. Based on the new data provided by these satellites, and aware of its importance, the CNP has established a three-year research programme to assess the status of poplar plantations. In addition, a computer algorithm is being developed for the analysis of satellite images, with 90 percent reliability in the identification of poplar plantations.

Agroforestry phytoremediation buffer systems in the Great Lakes Basin, USA

United States Department of Agriculture (USDA) Forest Service researchers and their partners completed the [establishment of 16 agroforestry phytoremediation buffer systems in the Great Lakes Basin, USA](#), comprising the world's largest phytotechnology testing network. The network is the only one of its kind, with replicated field trials testing specialized trees at landfills located over a wide latitudinal gradient across the rural to urban continuum. It addresses a wide range of real-world applications: runoff reduction, phytoremediation, phytostabilization, phytovolatilization, wastewater recycling, green infrastructure and stormwater management, and groundwater recycling. Given the design of the network and its numerous applications, results are relevant for and applicable to other sites beyond landfills, such as: mine reclamation and restoration, agroforestry, brownfields, urban afforestation/reforestation, sodic and saline areas, and riparian buffers.

Articles of interest

Special issue: Sustainable biomass value chains based on poplar plantations in European rural areas

The June 2021 issue of the *Journal of BioEnergy Research* is a special issue entitled [Sustainable biomass value chains based on poplar plantations in European rural areas](#). It addresses the main challenges for short rotation coppices (SRC) with poplars (*Populus* spp.) as agricultural crops for a sustainable bioeconomy. The issue focuses on: (1) challenges of generating adapted plant material in order to sustainably produce poplar biomass in northern regions; and (2) implementation of bio-based value chains on the basis of poplar SRC for a sustainable bioeconomy.



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Special issue: Growth and development of short rotation woody crops for rural and urban applications

The *Forests* journal is planning a special issue entitled [Growth and development of short rotation woody crops for rural and urban applications](#). Woody biomass from short rotation woody crops (SRWCs) plays a substantial role in feedstock production for alternative energy sources throughout the world, thereby helping to mitigate climate change driven by excessive use of fossil fuels. Establishment of these biomass production systems presents the basis for more efficient development of renewable energy sources, while avoiding adverse impacts on essential ecosystem services (i.e. additional emissions of carbon dioxide into the atmosphere). In addition to these bioenergy-related uses, the increase of degraded land, such as industrial brownfields and municipal landfills, has prompted the integration of biomass production with phytotechnologies to produce income, sequester carbon, and clean the environment. Recognizing the need for information linking the silviculture of intensive forestry with the provision of ecosystem services, this special issue focuses on the growth and development of SRWCs grown for all types of applications

Call for submissions: Special issue of Poplar biomass for the bioeconomy: Production, prediction and sustainability

The open access journal *Forests* (ISSN 1999-4907, IF 2.221) has launched a new special issue entitled [Poplar biomass for the bioeconomy: Production, prediction and sustainability](#). The issue aims to synthesize information on the potential sustainable production of biomass from poplar crops and is seeking contributions of articles. Papers may be submitted from now until 25 February 2022, as articles will be published on an ongoing basis. Submitted papers should not be proposed for publication elsewhere.

The journal encourages authors to send a short abstract or tentative title to the Editorial Office in advance (filip.vasic@mdpi.com).

Source: Dr Horensia Sixto

Identification of willows (*Salix*)

Publication about ovules and identification of willows (*Salix*), Marchenko, A. M. 2019. (Non-Stop Publishing House, Moscow. ISBN: 978-59909624-3-9. 116 pp.).

In this book, Alexander Marchenko presents the quantification of ovule numbers as a robust methodology, which can be used in addition to morphological characters and molecular data for willow classification, identification and verification of the parentage of hybrid species. The taxonomic importance of ovule numbers in the genus *Salix* has been previously explored by various investigators, including Chmelar, Argus and others. The author expands this approach and includes extensive data on ovule numbers for many *Salix* species.



Source: Yulia Kuzovkina, University of Connecticut, USA.

Communication between poplars and bacteria

The Autumn 2019 edition of the Washington Trails Association magazine included an article entitled [Trees are talking. How plants communicate and cooperate to survive environmental threats](#). The article presents the work of Professor of Environmental and Forestry Sciences Sharon Doty and Professor of Microbiology Carrie Harwood of the University of Washington, on communication between plants and bacteria in poplars through their rhizosphere.



©UW/Sharon Doty

This process favours tree development. Although the existence of symbiotic relationships between trees and certain bacteria is widely known, until recently it was believed that it only occurred in plants and trees with nodules. The new research focuses on demonstrating how bacteria, in addition to helping plants obtain the nutrients they need, can help plants to survive with less water.

Biometry of woody crops in short shift in Mediterranean conditions

Nerea de Oliveira Rodríguez's PhD thesis, entitled [Biometry of woody crops in short shift in Mediterranean conditions](#), argues that developing a circular bioeconomy based on the sustainable use of biological resources is the best way of responding to the challenges associated with global change. The use of biomass as a natural renewable resource is postulated as a key factor in generating a circular bioeconomy, due to its economic impacts, as well as its environmental and social implications. This thesis provides numerous quantitative tools for the management of crops, mostly of *Populus* species and hybrids (poplars), focusing on the evaluation of biometrics at different scales, from the individual tree to plantation level. The research was carried out as part of the 'Biomass for bioeconomy: Producing, quantifying and valuing forest crops' project, which involves close collaboration between the Center for International Forestry Research (CIFOR)-Instituto Nacional de Investigación Agraria (INIA) and the UXAFORES group of the University of Santiago de Compostela.

News of the IPC

Activities of IPC's working parties

Working Party 5: Environmental and Ecosystem Services (WP5) has developed [science briefs](#) to provide research results in a non-technical format for landowners, regulators, industrial representatives, researchers and others interested in producing fast-growing trees.

WP5 has also contributed to several publications of interest:

- [A systemic approach for prioritizing landfill pollutants based on toxicity: Applications and opportunities](#) (The manuscript was also featured in a [USDA Forest Service news release](#)).

- [Chapter 9- Bioremediation and soils](#)
- [Establishment of regional phytoremediation buffer systems for ecological restoration in the Great Lakes Basin, USA. I. Genotype x environment interactions](#)
- [Establishment of regional phytoremediation buffer systems for ecological restoration in the Great Lakes Basin, USA. II. New clones show exceptional promise](#)
- [Reflections on the contributions of *Populus* research at Rhinelander, Wisconsin, USA](#)
- [Growth and physiological responses of three poplar clones grown on soils artificially contaminated with heavy metals, diesel fuel, and herbicides](#)
- [Short rotation woody crop production systems for ecosystem services and phytotechnologies](#)
- [Ecosystem services, physiology, and biofuels recalcitrance of poplars grown for landfill phytoremediation](#)
- [Endophyte-promoted phosphorus solubilization in *Populus*](#)

Farewell to Benjamin Caldwell



With the departure of Benjamin Caldwell from FAO and the IPC Secretariat on 5 July 2021, the IPC Executive Committee wishes to convey their sincere gratitude for his hard work and commitment over the years. Benjamin, who served as IPC Secretary from 2019 to 2021, has been critical in the process surrounding the reform of the IPC and the development of the new IPC strategy. He also played a crucial role in the organization of the 26th Session of the IPC, particularly to adapt to the new realities of organizing a virtual session. His presence will be missed. We bid an affectionate farewell to Benjamin and wish him much success in his new endeavours in the United States.

Editorial Committee

Martin Weih, Chair, International Poplar Commission

Esteban Borodowski, Chair, Argentina Poplar Commission, IPC Executive Committee

Benjamin Caldwell, Forestry Officer, FAO

Julia Piñeiro Carreras, Argentina Poplar Commission

To subscribe or make enquiries, please write to the Secretariat of the International Commission on Poplars and other Fast-Growing Trees Sustaining People and the Environment, FAO: IPC-Secretariat@fao.org