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Forests, Science and People



1.01.13 - ECOLOGY AND SILVICULTURE OF CHESTNUT

Coordinator: Stacy Clark

Deputies: Veronica Loewe, Maria Patricio and Enrico Marcolin

Nr. 5 / 2023 - April

Come and join us at: <https://www.iufro.org/science/divisions/division-1/10000/10100/10113/>

This is the newsletter from the IUFRO working party 1.01.13 '[Ecology and Silviculture of Chestnut](https://www.iufro.org/science/divisions/division-1/10000/10100/10113/)'. With this newsletter, we aim at sharing information, exchanging research ideas, and building a network among chestnut researchers. The newsletter will be published every 3 months (see here for previous numbers: <https://www.iufro.org/science/divisions/division-1/10000/10100/10113/publications/>).

If you have an item of interest to share, such as meetings, publications, research projects or job opportunities, please see the Newsletter contributions section below.

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**** **CALL FOR ABSTRACTS** for the XXVI IUFRO Congress in Stockholm, Sweden, 23 – 29 June 2024, **IS OPEN** ****

Welcomes submissions of abstracts for presentations in sub-plenary, technical and/or posters for dedicated sessions

SILVICULTURE FOR THE BIOECONOMY AND ECOSYSTEM SERVICES IN CASTANEA FORESTS

<https://iufro2024.com/call-for-congress-abstracts/>

Abstract submission **DEADLINE: 2 JUNE 2023**

***** Updated summary of the FORECO Special Issue on Ecology and Management of Chestnut - 1*****



Ecology and Management of Castanea Species

Edited by Stacy Clark, Enrico Marcolin, Verónica Loewe, Maria Patrício
Last update 18 February 2022

Chestnut (*Castanea*) contains thirteen species naturally occurring in Europe, Asia, and North America, and naturalized and cultivated populations occur in South America. Chestnut species are threatened by non-native pests and pathogens, land-use degradation, and climate change. Knowledge gaps exist in understanding sustainable methods to manage, restore or regenerate chestnut stands naturally or artificially. This special issue will provide a platform to share the latest research information on ecology and silviculture of chestnut species. The goal of the special issue is to contribute towards a better understanding of strategies needed to improve performance and success of restoring or sustaining chestnut forests.

*****Currently published for the SPECIAL ISSUE:**

*Preferential allocation of carbohydrate reserves belowground supports disturbance-based management of American chestnut (*Castanea dentata*)*

Madeline S. Montague, Simon M. Landhäusser, Gordon G. McNickle, Douglass F. Jacobs
1 April 2022 - <https://doi.org/10.1016/j.foreco.2022.120078>

Preferences of avian seed-hoarders in advance of potential American chestnut reintroduction

James R. Wright, Stephen N. Matthews, Cornelia C. Pinchot, Christopher M. Tonra
1 May 2022 - <https://doi.org/10.1016/j.foreco.2022.120133>

Phenology, cold injury and growth of American chestnut in a Range-Wide provenance test

Paul G. Schaberg, Paula F. Murakami, Kendra M. Collins, Christopher F. Hansen, Gary J. Hawley
1 June 2022 - <https://doi.org/10.1016/j.foreco.2022.120178>

Mixed-effects generalized height-diameter model: A tool for forestry management of young sweet chestnut stands

Maria Sameiro Patrício, Cremildo R.G. Dias, Luís Nunes
15 June 2022 - <https://doi.org/10.1016/j.foreco.2022.120209>

***** Updated summary of the FORECO Special Issue on Ecology and Management of Chestnut - 2 *****

Deer browse susceptibility limits chestnut restoration success in northern hardwood forests
Cornelia C. Pinchot, Alejandro A. Royo, John S. Stanovick, Scott E. Schlarbaum, ... Sandra L. Anagnostakis

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120481>

Temperate coppice forests in north-western Italy are resilient to wild ungulate browsing in the short to medium term

Alessandra Bottero, Fabio Meloni, Matteo Garbarino, Renzo Motta

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120484>

Optimizing quality wood production in chestnut (Castanea sativa Mill.) coppices

Maria Chiara Manetti, Marco Conedera, Francesco Pelleri, Piergiuseppe Montini, ... Enrico Marcolin

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120490>

Restoring a keystone tree species for the future: American chestnut assisted migration plantings in an adaptive silviculture experiment

Peter W. Clark, Alissa J. Freeman, Anthony W. D'Amato, Paul G. Schaberg, ... Christopher W. Woodall

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120505>

Effectiveness of chemical and physical methods for stump sprout control in Castanea sativa Mill

Pau Vericat, Jaime Coello, Mario Beltrán, Miriam Piqué

1 December 2022 - <https://doi.org/10.1016/j.foreco.2022.120537>

Comparisons of interspecies field performance of Fagaceae (Castanea and Quercus) planted in the southeastern United States with attention to soil fungal impacts on plant performance

Shawn P. Brown, Stacy L. Clark, Emerald Ford, Ari Jumpponen, ... Richard Baird

1 December 2022 - <https://doi.org/10.1016/j.foreco.2022.120569>

Effects of growth Medium, temperature and mycelium age on CHV-1 accumulation and transmission

Pedro Romon-Ochoa, Alex Lewis, Caroline Gorton, Sietse van der Linde, Ana Pérez-Sierra

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120705>

Impacts of spatial scale and resolution on species distribution models of American chestnut (Castanea dentata) in Pennsylvania, USA

Alec F. Henderson, Jennifer A. Santoro, Peleg Kremer

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120741>

Mixed Castanea sativa plantations including arboreal companion species enhance chestnut growth and high-quality timber production

Verónica Loewe-Muñoz, Claudia Delard, Rodrigo del Río, Luis Barrales, Mónica Balzarini

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120742>

Development of tools to estimate the contribution of young sweet chestnut plantations to climate-change mitigation

M. Menéndez-Miguélez, P. Álvarez-Álvarez, M. Pardos, G. Madrigal, ... R. Calam

15 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120761>

***** Updated summary of the FORECO Special Issue on Ecology and Management of Chestnut - 3*****

Effect of thinning on growth and shape of Castanea sativa adult tree plantations for timber production in Chile

Susana Benedetti-Ruiz, Verónica Loewe-Muñoz, Rodrigo Del Río, Claudia Delard, ... Mónica Balzarini

15 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120762>

Convergent shifts in soil fungal communities associated with Fagaceae reforestation in the Southern Appalachian Mountains

Shawn P. Brown, Stacy L. Clark, Emerald Ford, Nahreen Mirza, ... Richard Baird

1 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120805>

Eight-year field performance of backcross American chestnut (Castanea dentata) seedlings planted in the southern Appalachians, USA

Stacy L. Clark, Scott E. Schlarbaum, Arnold M. Saxton, Steven N. Jeffers, Richard E. Baird

15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120820>

The role of ectomycorrhization with Scleroderma sp. in promoting substrate nutrients mobilization under phosphorus-enriched compost amendment: A case study with Castanea henryi seedlings

Wangzun Chen, Libing He, Shiyi Tian, Deyi Yuan, ... Feng Zou

15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120823>

Age, size and neighbors influence the survival and growth of understory trees in a naturally reproducing population of American chestnut, Castanea dentata

Harmony J Dalgleish, Lindsey Monteith, Erica Collins

15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120824>

Sweet chestnut forests under black locust invasion threat and different management: An assessment of stand structure and biodiversity

Thomas Campagnaro, Giovanni Trentanovi, Simone Iacopino, Andrea Squartini, ... Tommaso Sitzia

1 June 2023 - <https://doi.org/10.1016/j.foreco.2023.120907>

Comparative growth and physiological performance of American Chestnuts, Oaks, Hickories, and sugar maple across a silvicultural gradient in overstory retention

Garrett R. Evans, Julia I. Burton, William A. Powell, John E. Drake

15 May 2023 - <https://doi.org/10.1016/j.foreco.2023.120908>

A silvicultural synthesis of sweet (Castanea sativa) and American (C. dentata) chestnuts

Stacy L. Clark, Enrico Marcolin, Maria Sameiro Patrício, Verónica Loewe-Muñoz

1 July 2023 - <https://doi.org/10.1016/j.foreco.2023.121041>

For updates on the Special Issue:

<https://www.sciencedirect.com/journal/forest-ecology-and-management/special-issue/10RX05B62LH>

Group members



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News from the working party

Our working party was officially formed in May 2021. We have held several virtual meetings to discuss future projects and opportunities for collaboration. In addition to this newsletter, our first project was to develop a **special issue** on chestnut ecology and silviculture (see above), including a synthesis paper on *Castanea sativa* and *C. dentata*.

We also submitted a **special session** proposal to the **IUFRO World Congress** to be held in Stockholm in 2024 (see <https://iufro2024.com/> for more information), that was accepted as Technical session T2.26 - *Silviculture for the Bioeconomy and Ecosystem Services in Castanea Forests*.

Please contact us if you would like to collaborate with us on this special session proposal. We are particularly interested in collaborating with other IUFRO Divisions or Working Parties.

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News from the chestnut world

- **Chestnut Chat Series**, TACF invites poster contest winners and participants from the 2022 Annual Symposium to recap their work.
All Chestnut Chats are LIVE via Zoom, so you can attend from anywhere!
Friday, March 17, 2023 at 11:30 AM (EST)
[Chat series registration web-page](#)
- **VII International Chestnut Symposium Lugo**, Spain: June 26-29, 2023
<https://www.chestnutsymposium.com/>
 - Start Abstract submission: September 15th, 2022
 - Deadline abstract submission: March 1st, 2023
 - Early registration period opens on 1st February
- **2023 European Chestnut Days**, Austria: September 13-15, 2023
<http://www.eurocastanea.org/european-chestnut-days.html>

Call for Papers

- Call for Papers on Forest Ecology and Management - Special Issue: Ecology and Management of Castanea #CLOSED#
- **Call for Abstract to be presented at a special session on the XXVI IUFRO Congress in Stockholm, Sweden, 23 – 29 June 2024, IS OPEN:** <https://iufro2024.com/call-for-congress-abstracts/>

Technical Theme 2 - Towards a responsible forest bioeconomy:

T2.26 Silviculture for the Bioeconomy and Ecosystem Services in Castanea Forests

Abstracts **must be submitted by 2 June 2023**. Authors will be informed of their abstract acceptance by 30 October 2023.

The goal of this technical session is to facilitate knowledge exchange and promote synergy on the ecology and silviculture of Castanea within a bioeconomy framework.

The session will facilitate a better understanding of strategies needed to improve performance and success of restoring or sustaining chestnut forests in pure stands, as a component to enrich mixed stands, or as agroforestry systems while being mindful of cultural and economic ramifications. This session takes a progressive approach to compile and improve upon existing knowledge on the silviculture, management, and ecology of chestnut by focusing on multi-species across multi-continental scales.

We will provide multiple platforms for participation including **oral presentations, posters, flash talks**, and an audience question period for all presenters.

Featured Papers and Books

We ask for your cooperation in case you want to report news (see the section Newsletter contributions).

Ensemble modeling for American chestnut distribution: Locating potential restoration sites in Pennsylvania. 2022. *Front. Ecol. Evol.* 10:942766.

Henderson AF, Santoro JA and Kremer P

<https://doi.org/10.3389/fevo.2022.942766>

New Symptoms in Castanea sativa Stands in Italy: Chestnut Mosaic Virus and Nutrient Deficiency. 2022. *Forests*, no. 11: 1894.

Murolo, Sergio, Daniela Bertoldi, Federico Pedrazzoli, Manuela Mancini, Gianfranco Romanazzi, and Giorgio Maresi.

<https://doi.org/10.3390/f13111894>

Habitat suitability model and range shift analysis for American Chestnut (Castanea dentata) in the United States. 2023. *Trees, Forests and People* 11 (2023): 100360.

Adeyemo, Segun M., and Joshua J. Granger.

<https://doi.org/10.1016/j.tfp.2022.100360>

Warming Scenarios and Phytophthora cinnamomi Infection in Chestnut (Castanea sativa Mill.). 2023. *Plants*, 12(3), 556.

Dorado, F. J., Alías, J. C., Chaves, N., & Solla, A.

<https://doi.org/10.3390/plants12030556>

Distribution of Phytophthora species within recreational chestnut, beech and cork oak forests. 2023. *Forest Ecology and Management*, 529, 120674.

Štraus, D., Caballol, M., Serradó, F., Oliveras, J., Ramis, X., & Oliva, J.

<https://doi.org/10.1016/j.foreco.2022.120674>

GIS-Based Geopedological Approach for Assessing Land Suitability for Chestnut (Castanea sativa Mill.) Groves for Fruit Production. 2023. *Forests*, 14(2), 224.

Rossi, M., De Feudis, M., Trenti, W., Gherardi, M., Vianello, G., & Antisari, L. V.

<https://doi.org/10.3390/f14020224>

High genetic diversity in American chestnut (Castanea dentata) despite a century of decline. 2023. *Conservation Genetics*, 24(1), 25-39.

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<https://doi.org/10.1007/s10592-022-01473-3>

Effect of Soil Mixtures Based on a Gneiss-Derived Soil and Two Forest Floor Types on Growth and Nutritional Status of Castanea sativa Mill. Seedlings. 2023. *Journal of Soil Science and Plant Nutrition*, 1-12.

Papaioannou, E., Gasparatos, D., Stefanou, S., Chatzistathis, T., Karamanoli, K., & Matziris, E.

<https://doi.org/10.1007/s42729-023-01124-7>

Heat stress and recovery effects on the physiology and biochemistry of Castanea sativa Mill. 2023. *Frontiers in Forests and Global Change* 5:1072661. *Sec. Forest Ecophysiology.*

Dorado, F. J., Pinto, G., Monteiro, P., Chaves, N., Alías, J. C., Rodrigo, S., ... & Solla, A.

<https://doi.org/10.3389/ffgc.2022.1072661>

Evolutionary history of Castanea sativa Mill. in the Caucasus driven by Middle and Late Pleistocene paleoenvironmental changes. 2023. bioRxiv 2023.01.11.523563.

Berika Beridze, Katarzyna Sekiewicz, Łukasz Walas, Peter A. Thomas, Irina Danelia, Giorgi Kvartskhava, Vahid Fazaliyev, Angela A. Bruch, Monika Dering

<https://doi.org/10.1101/2023.01.11.523563>

Torymus sinensis against the invasive chestnut gall wasp: evaluating the physiological host range and hybridization risks of a classical biological control agent. 2023. Biological Control, 105187.

Gil-Tapetado, D., López-Estrada, E. K., Ruiz, Y. J., Cabrero-Sañudo, F. J., Gómez, J. F., Montes, P. D., ... & Nieves-Aldrey, J. L.

<https://doi.org/10.1016/j.biocontrol.2023.105187>

GIS-Based Geopedological Approach for Assessing Land Suitability for Chestnut (Castanea sativa Mill.) Groves for Fruit Production. 2023. Forests, 14(2), 224.

Rossi, M., De Feudis, M., Trenti, W., Gherardi, M., Vianello, G., & Antisari, L. V.

<https://doi.org/10.3390/f14020224>

Assessing the susceptibility levels of chestnut cultivars/genotypes to Asian chestnut gall wasp (Dryocosmus kuriphilus Yasumatsu). 2023. Notulae Botanicae Horti Agrobotanici Cluj-Napoca, 51(1), 13056-13056.

Müftüoğlu, B., Cevriye, M. E. R. T., & Gençer, N. S.

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Bruzzese, S.; Blanc, S.; Novelli, S.; Brun, F.

(doi: [10.20944/preprints202302.0280.v1](https://doi.org/10.20944/preprints202302.0280.v1)).

Phenotypic polymorphism of leaves among the populations of Moroccan chestnut ('Castanea sativa' Mill.). 2022. Australian Journal of Crop Science, 16(10), 1170-S3.

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Net-Carbon Dioxide Surplus as an Environmental Indicator for Supporting Timber Markets: A Case Study in Italy. 2023. Forests, 14(2), 419.

Carbone, F., Corona, P., Hussain, M., & Barbarese, F.

<https://doi.org/10.3390/f14020419>

Castanea mollissima (hairy chestnut), CABI Compendium. 2022.

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Castanea sativa (chestnut), CABI Compendium. 2022.

CABI International.

<https://doi.org/10.1079/cabicompendium.16586>

Cryphonectria parasitica (blight of chestnut), CABI Compendium. 2022.

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Álvarez-Lafuente, A., Benito-Matías, L.F., Uscola, M. et al. *Tuber melanosporum drives the symbiosis with Castanea sativa seedlings under greenhouse conditions and high calcium levels*. 2023. *Symbiosis* 89, 273–281.

Álvarez-Lafuente, A., Benito-Matías, L. F., Uscola, M., & Suz, L. M.

<https://doi.org/10.1007/s13199-023-00896-x>

Effect of grafting on phenology, susceptibility to Phytophthora cinnamomi and hormone profile of chestnut. 2023. *Scientia Horticulturae*, 311, 111789.

Camisón, Á., Martín, M. Á., Sánchez-Bel, P., Flors, V., Cubera, E., & Solla, A.

<https://doi.org/10.1016/j.scienta.2022.111789>

The impact of the Asian chestnut gall wasp (Dryocosmus kuriphilus) on chestnut tree growth may be mediated by site resources. 2023. *Frontiers in Forests and Global Change* 5:109518

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<https://doi.org/10.3389/ffgc.2022.1095185>

Validation of an alternative small stem assay for blight resistance in backcross hybrid chestnuts (Castanea spp.) and recommendations for its expanded use. 2022. *Plant Disease*, (ja).

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Bark-inhabiting fungal communities of European chestnut undergo substantial alteration by canker formation following chestnut blight infection. 2023. *Frontiers in Microbiology*, 14, 102

Douanla-Meli, C., & Moll, J.

<https://doi.org/10.3389/fmicb.2023.1052031>

Mapping the Leaf Area Index of Castanea sativa Miller Using UAV-Based Multispectral and Geometrical Data. 2022. *Drones*, 6(12), 422.

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Canker Development and Biocontrol Potential of CHV-1 Infected English Isolates of Cryphonectria parasitica Is Dependent on the Virus Concentration and the Compatibility of the Fungal Inoculums. 2022. *Viruses*, 14(12), 2678.

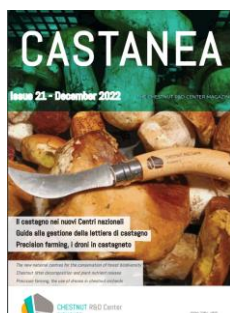
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Soil distribution of Phytophthora cinnamomi inoculum in oak afforestation depends on site characteristics rather than host availability. 2022. *New Forests*, 1-23.

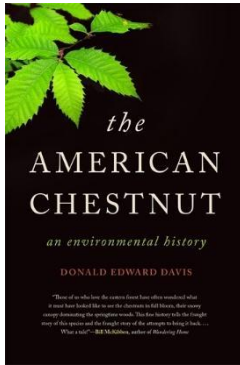
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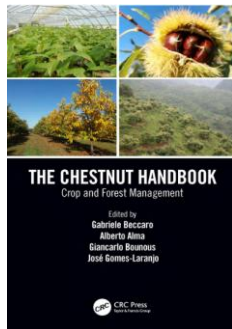
THE CHESTNUT R&D CENTER MAGAZINE
News about R&D concerning *Castanea sativa*
(in Italian and English)

<https://centrocastanicoltura.org/magazine/>



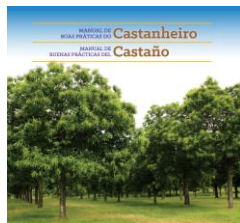
The American Chestnut: An Environmental History. 2021, University of Georgia Press. Athens, Georgia, USA. ISBN: 9-780-8203-6045-4.
Davis, D.E

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<https://doi.org/10.1201/9780429445606>



Manual de Boas Práticas do Castanheiro.
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Bento, A. and Ribeiro, A. C. (Eds.).

<http://esa.ipb.pt/pdf/ManualBoasPraticasCastanheiro.pdf>



Le selve castanili della Svizzera italiana. Aspetti storici, paesaggistici, ecologici e gestionali. Memorie della Società ticinese di scienze naturali, 13, 249 p.

Moretti M., Moretti G. & Conedera M. (eds.).

Multimedia

Clark, S. L. (2021). *An introduction to the American chestnut (Castanea dentata)*[Online course]. Gen. Tech. Rep. SRS-271. Asheville, NC: US Department of Agriculture Forest Service, Southern Research Station., 271. <https://www.fs.usda.gov/research/srs/products/multimedia/webinars/introduction-american-chestnut>



The course is a self-paced course with interactive features. Learners can download information or navigate to external websites. Topics such as biology, silvics, ecology, historical and cultural importance, and effects of non-native species are covered. The course has audio to accompany each page, dendrology tables and papers for download, and a glossary. The total time to take the course is approximately 75 minutes, but this will vary by learner.

Developed by Stacy L. Clark, Research Forester, USDA Forest Service, Southern Research Station (stacy.l.clark@usda.gov; 865-318-8391)

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Newsletter contributions

Do you have news for us? Newsletter contributions are welcome (i.e. upcoming Seminars, Scholarships, Workshops, Conferences, Blogs, Websites...).

If you would like to contribute to the newsletter, please contact Stacy Clark (stacy.l.clark@usda.gov), Veronica Loewe (vloewe@infor.cl), Maria Patricio (sampat@ipb.pt) or Enrico Marcolin (enrico.marcolin@unipd.it).