

# Simone Gingrich

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September 2018

## Personal Details

Academic degrees	Dr.phil in Social Ecology (Universitaet Klagenfurt (AAU), 2010); Mag.rer.nat in ecology (University of Vienna, 2004)
Current position	Researcher and lecturer, Institute of Social Ecology, Department of Economics and Social Sciences, University of Natural Resources & Life Sciences, Vienna (Boku)
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ORCID ID	0000-0001-7891-8688
ResearcherID	L-4862-2016
Nationality	Austrian
Children	Ida and Dominik, *2011

## Research interests

Long-term socio-ecological research (LTSER) at local to global scales; land and resource use; socio-ecological metabolism; application of socio-metabolic accounting to various spatio-temporal contexts; inter- and transdisciplinary sustainability research

## Professional employment history

2018-	Researcher and lecturer at the Institute of Social Ecology, Department of Economics and Social Sciences, Boku
2005-2018	Researcher and lecturer at the Institute of Social Ecology, AAU
2011-2012	parental leave (20.5 months)
2003-2005	Freelance researcher and curator at the Technical Museum Vienna
2004	Freelance researcher at the Institute of Social Ecology, AAU

## Education and academic qualification

2006-2010	PhD in Social Ecology, AAU. Thesis title: "A social ecology of European industrialisation: energy, material, carbon and the socio-ecological transition". Supervisor: Fridolin Krausmann
May 2009	research stay at Pablo Olavide University, Seville, Spain
Oct-Dec 2009	research stay as visiting PhD student at Sustainability Research Institute, University of Leeds, United Kingdom
1998-2004	Mag. in Ecology, University of Vienna. Thesis title: „Veränderungen von Landnutzung und Energieflüssen in ausgewählten Agrarökosystemen Oberösterreichs 1866 bis 2000“. Supervisor: Marina Fischer-Kowalski
2002-2003	Erasmus semester at Université Montpellier II, France

## Research projects (selection)

- 2018- HEFT – Hidden Emissions of Forest Transitions: GHG effects of socio-metabolic processes reducing pressures on forests (ERC Starting Grant 757995); PI
- 2017- ILLAS – Integrating Land use Legacies in Landslide Risk Assessment to support Spatial Planning (Austrian Climate Research Panel); Co-PI
- 2016- LTSER Concept II (Austrian Academy of Sciences); PI of SEC contribution
- 2012-2017 SFS – Sustainable Farm Systems (Canadian Social Sciences and Humanities Research Council Partnership Grant 895-2011-1020); deputy PI of SEC contribution
- 2014-2015 LTSER Concept (Austrian Academy of Sciences); deputy PI of SEC contribution
- 2012-2013 VOLANTE – Visions of land-use transitions in Europe (EU FP7 grant agreement 265104); contributor
- 2010-2011 ENVIEDAN – Environmental History of the Viennese Danube 1500-1890 (Austrian National Science Fund P 22265); contributor
- 2008-2011 GLOMETRA – the global metabolic transition (Austrian National Science Fund P 21012); contributor
- 2008-2011 Analyzing global HANPP (Austrian National Science Fund P 20812); contributor
- 2008-2010 Our Environment has a History (Ministry of Science and Research, Sparkling Science Programme); deputy PI
- 2008-2009 cc.alps (MAVA foundation for nature); deputy PI of SEC contribution
- 2007-2008 Adaptation Study (Austrian Ministry of Agriculture, Forestry, Environment and Water); deputy PI of SEC contribution
- 2005-2009 Long-Term Socio-Ecological Research Eisenwurzen (Austrian Ministry of Education, Science and Culture, ProVision Programme); contributor
- 2005-2007 Global HANPP (Austrian National Science Fund P 16692); contributor
- 2005-2007 TransEurope (Austrian National Science Fund P 16759); contributor
- 2005-2008 Carbon AUT 1830-2000 (Austrian Academy of Sciences, Global Change Programme); contributor

## Teaching activities

- 2018 Peer Seminar in Social Ecology (1 time with N. Eisenmenger, AAU, doctoral level)
- 2018 Master/Doctoral Seminar Environmental History (1 time with F. Krausmann and M. Schmid, AAU, doctoral and master level)
- 2015-2018 Introductory Seminar Social Ecology (4 times with changing partners (M. Schmid, T. Kastner, C. Görg, N. Eisenmenger), AAU, master level)
- 2008-2014 Seminar Environmental History Austria (4 times with M. Schmid, AAU, master level)
- 2008-2010 Introductory course Interdisciplinary Studies (3 times with changing partners (M. Schmid, W. Haas), AAU, master level)
- 2006-2008 Lecture Series Social Ecology (3 times with M. Fischer-Kowalski, AAU, master level)

## Supervision of graduate students

- 2014- Supervision and co-supervision of 7 master theses (2 ongoing, 5 completed) at AAU (master in Social and Human Ecology) and University of Vienna (masters in Ecology and History)

## **Institutional responsibilities**

- 2010- Member of master exam committees (examiner: 11 times, chair: 18 times) in master program "Social and Human Ecology", AAU
- 2016- Member of three PhD defense tribunals (Universidade de Santiago de Compostela, Universitat de Barcelona, Université Pierre & Marie Curie)
- 2016-2018 Research coordinator of thematic area "Long-term socio-ecological research and Environmental History" at the Institute of Social Ecology, AAU
- 2005-2011 Coordinator of the Center for Environmental History (ZUG), AAU
- 2005-2008 Coordinator of teaching agendas, Institute of Social Ecology, AAU

## **Awards and commissions of trust**

- 2018- Member of the Austrian Academy of Sciences (Young Academy)
- 2017 ERC Starting Grant for project "Hidden Emissions of Forest Transitions" (see research projects)
- 2010 Award of Excellence for PhD dissertation, awarded by the Austrian Ministry of Science and Research
- 2009- Reviewer for scientific journals: Animal, Anthropocene, AUC Geographica, Ecological Economics, Economics Bulletin, Energy Policy, Environmental Research Letters, Forests, Global Change Biology, Global Environmental Change, Historia Agraria, International Journal of Geo-Information, Journal of Cleaner Production, Journal of Environmental Management, Journal of Industrial Ecology, Land Use Policy, Regional Environmental Change, Remote Sensing, Scandinavian Economic History Review, Science of the Total Environment, Sustainability, Waste Management, Web Ecology
- 2016- Reviewer for project proposals to "OeNB Anniversary Fund" (Austria) and "Le Studium" (France)
- 2015 Reviewer for conference contributions: Conference of the European Society of Ecological Economics (ESEE 2015) in Leeds, United Kingdom

## **Further education**

- 2013-2014 Seminar series project management, WIFI Vienna
- 2009 Pre-Conference PhD-Workshop Integration of Historical Research in Interdisciplinary Environmental and Resource Management (European Society for Environmental History), Roskilde, Denmark
- 2007-2008 fFORTE Coachings for women in science and technology
- 2007 Interdisciplinary PhD Summer School Technologies and their environments (TU Darmstadt), Ockenheim, Germany
- 2006 3rd Summer School on Integrated Analysis of Sustainability (Liphe4), Murcia, Spain
- 2006 Advanced study course for interdisciplinary communication in sustainability sciences, AAU

## Publications

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### Articles in peer-reviewed journals

Dick J., Orenstein D. E., Holzer J. M., Wohner C., Achard A.-L., Andrews C., Avriel-Avni N., Beja P., Blond N., Cabello J., Chen C., Díaz-Delgado R., Giannakis G. V., **Gingrich S.**, Izakovicova Z., Krauze K., Lamouroux N., Leca S., Melecis V., Miklós K., Mimikou M., Niedrist G., Piscart C., Postolache C., Psomas A., Santos-Reis M., Tappeiner U., Vanderbilt K., & Van Ryckegem G. (2018) What is socio-ecological research delivering? A literature survey across 25 international LTSER platforms. *Science of The Total Environment*, **622–623**, 1225–1240, doi:10.1016/j.scitotenv.2017.11.324.

Dullinger S., Essl F., Rabitsch W., Erb K.-H., **Gingrich S.**, Haberl H., Hulber K., Jarosik V., Krausmann F., Kuhn I., Pergl J., Pysek P., & Hulme P.E. (2013) Europe's other debt crisis caused by the long legacy of future extinctions. *Proceedings of the National Academy of Sciences*, **110**, 7342–7347. doi: 10.1073/pnas.1216303110

Erb K.-H., **Gingrich S.**, Krausmann F., & Haberl H. (2008) Industrialization, Fossil Fuels, and the Transformation of Land Use. *Journal of Industrial Ecology*, **12**, 686–703. doi: 10.1111/j.1530-9290.2008.00076.x

Erb K.-H., Krausmann F., Gaube V., **Gingrich S.**, Bondeau A., Fischer-Kowalski M., & Haberl H. (2009) Analyzing the global human appropriation of net primary production—processes, trajectories, implications. An introduction. *Ecological Economics*, **69**, 250–259. <http://dx.doi.org/10.1016/j.ecolecon.2009.07.001>

Erb, K.-H., & Gingrich, S. (2010) Die Industrialisierung Der Landschaft. Der Österreichische Kohlenstoffhaushalt in Gesellschaft und Natur 1830-2000. *Österreich in Geschichte und Literatur (Mit Geographie)*, **54**, 134–45.

Erb K.-H., Haberl H., **Gingrich S.**, & Krausmann F. (2009) Integrated Assessment of Carbon in Austria 1830-2000 Reveals Strong Feedbacks between Socioeconomic and Ecological Drivers. *GLP News*, **5**, 16–17.

Erb K.-H., Kastner T., Plutzer C., Bais A.L.S., Carvalhais N., Fetzel T., **Gingrich S.**, Haberl H., Lauk C., Niedertscheider M., Pongratz J., Thurner M., & Luysaert S. (2018) Unexpectedly large impact of forest management and grazing on global vegetation biomass. *Nature*, **553**, 73–76. doi: 10.1038/nature25138

Galán E.S., Padró R., Marco I., Tello E., Cunfer G., Guzman G.I., Gonzalez de Molina M., Krausmann F., **Gingrich S.**, Sacristán V., & Moreno D. (2016) Widening the analysis of Energy Return On Investment (EROI) in agro-ecosystems: ocio-ecological transitions to industrialized farm systems (the Vallès County, Catalonia, c.1860 and 1999). *Ecological Modelling*, **336**, 13–25. doi: 10.1016/j.ecolmodel.2016.05.012

Gierlinger S., Haidvogel G., **Gingrich S.**, & Krausmann F. (2013) Feeding and Cleaning the city: The role of the urban waterscape in provision and disposal in Vienna during the industrial transformation. *Water History*, **5**, 219–239. doi:10.1007/s12685-013-0075-1

**Gingrich S.**, Erb K.-H., Krausmann F., Gaube V., & Haberl H. (2007) Long-term dynamics of terrestrial carbon stocks in Austria: a comprehensive assessment of the time period from 1830 to 2000. *Regional Environmental Change*, **7**, 37–47. doi: 10.1007/s10113-007-0024-6

- Gingrich S.** (2011) Foreign trade and early industrialisation in the Habsburg Monarchy and the United Kingdom — Two extremes in comparison. *Ecological Economics*, **70**, 1280–1288. doi: 10.1016/j.ecolecon.2010.08.013
- Gingrich S.**, Kušková P., & Steinberger J.K. (2011) Long-term changes in CO2 emissions in Austria and Czechoslovakia—Identifying the drivers of environmental pressures. *Energy Policy*, **39**, 535–543. doi: 10.1016/j.enpol.2010.10.006
- Gingrich S.**, Haidvogel G., & Krausmann F. (2012) The Danube and Vienna: urban resource use, transport and land use 1800–1910. *Regional Environmental Change*, **12**, 283–294. doi:10.1007/s10113-010-0201-x
- Gingrich S.**, Haidvogel G., Krausmann F., Preis S., & Garcia-Ruiz R. (2015) Providing Food While Sustaining Soil Fertility in Two Pre-industrial Alpine Agroecosystems. *Human Ecology*, **43**, 395–410. doi: 10.1007/s10745-015-9754-0
- Gingrich S.**, Niedertscheider M., Kastner T., Haberl H., Cosor G., Krausmann F., Kuemmerle T., Müller D., Reith-Musel A., Jepsen M.R., Vadineanu A., & Erb K.-H. (2015) Exploring long-term trends in land use change and aboveground human appropriation of net primary production in nine European countries. *Land Use Policy*, **47**, 426–438. doi: 10.1016/j.landusepol.2015.04.027
- Gingrich S.**, Schmid M., Dirnböck T., Dullinger I., Garstenauer R., Gaube V., Haberl H., Kainz M., Kreiner D., Mayer R., Mirtl M., Sass O., Schauppenlehner T., Stocker-Kiss A., & Wildenberg M. (2016) Long-Term Socio-Ecological Research in Practice: Lessons from Inter- and Transdisciplinary Research in the Austrian Eisenwurzen. *Sustainability*, **8**, 743. doi: 10.3390/su8080743
- Gingrich S.**, Theurl M.C., Erb K.-H., & Krausmann F. (2018) Regional specialization and market integration: agroecosystem energy transitions in Upper Austria. *Regional Environmental Change*, **18**, 937–950. doi: 10.1007/s10113-017-1145-1
- Gingrich S.**, Marco I., Aguilera E., Padró R., Cattaneo C., Cunfer G, Guzmán G, MacFadyen J, & Watson A. (2018) Agroecosystem energy transitions in the old and new worlds: trajectories and determinants at the regional scale. *Regional Environmental Change*, **18**, 1089–1101. doi: 10.1007/s10113-017-1261-y
- Gingrich S.**, Cunfer G., & Aguilera E. (2018) Agroecosystem energy transitions: exploring the energy-land nexus in the course of industrialization. *Regional Environmental Change*, **18**, 929–936. doi: 10.1007/s10113-018-1322-x
- Gingrich S.**, & Krausmann F. (2018) At the core of the socio-ecological transition: Agroecosystem energy fluxes in Austria 1830–2010. *Science of The Total Environment* **645**, 119–129. doi: 10.1016/j.scitotenv.2018.07.074
- Gizicki-Neundlinger M., **Gingrich S.**, Güldner D., Krausmann F., & Tello E. (2017) Land, Food and Labor in Pre-Industrial Agro-Ecosystems - A Socio-Ecological Perspective on Early 19th Century Seigniorial Systems. *Historia Agraria*, **71**, 37-78.
- Grešlová P., **Gingrich S.**, Krausmann F., Chromý P., & Jančák V. (2015) Social metabolism of Czech agriculture in the period 1830–2010. *AUC GEOGRAPHICA*, **50**, 23–35. doi: 10.14712/23361980.2015.84
- Haberl H., Erb K.H., Krausmann F., Gaube V., Bondeau A., Plutzer C., **Gingrich S.**, Lucht W., & Fischer-Kowalski M. (2007) Quantifying and mapping the human appropriation of net primary production in earth's terrestrial ecosystems. *Proceedings of the National Academy of Sciences*, **104**, 12942–12947. doi: 10.1073/pnas.0704243104

- Haberl, H., Krausmann, F., & **Gingrich, S.** (2006) Ecological Embeddedness of the Economy. A Socioecological Perspective on Humanity's Economic Activities 1700-2000. *Economic and Political Weekly* XLI, **47**, 4896–4904.
- Haberl H., Steinberger J.K., Plutzer C., Erb K.-H., Gaube V., **Gingrich S.**, & Krausmann F. (2012) Natural and socioeconomic determinants of the embodied human appropriation of net primary production and its relation to other resource use indicators. *Ecological Indicators*, **23**, 222–231. <http://dx.doi.org/10.1016/j.ecolind.2012.03.027>
- Krausmann F., Erb K.-H., **Gingrich S.**, Haberl H., Bondeau A., Gaube V., Lauk C., Plutzer C., & Searchinger T.D. (2013) Global human appropriation of net primary production doubled in the 20th century. *Proceedings of the National Academy of Sciences*, **110**, 10324–10329. doi: 10.1073/pnas.1211349110
- Krausmann F., Erb K.-H., **Gingrich S.**, Lauk C., & Haberl H. (2008) Global patterns of socioeconomic biomass flows in the year 2000: A comprehensive assessment of supply, consumption and constraints. *Ecological Economics*, **65**, 471–487. doi: 10.1016/j.ecolecon.2007.07.012
- Krausmann F., **Gingrich S.**, Eisenmenger N., Erb K.-H., Haberl H., & Fischer-Kowalski M. (2009) Growth in global materials use, GDP and population during the 20th century. *Ecological Economics*, **68**, 2696–2705. doi: 10.1016/j.ecolecon.2009.05.007
- Krausmann F., **Gingrich S.**, Haberl H., Erb K.-H., Musel A., Kastner T., Kohlheb N., Niedertscheider M., & Schwarzlmüller E. (2012) Long-term trajectories of the human appropriation of net primary production: Lessons from six national case studies. *Ecological Economics*, **77**, 129–138. doi:10.1016/j.ecolecon.2012.02.019
- Krausmann F., **Gingrich S.**, & Nourbakhch-Sabet R. (2011) The Metabolic Transition in Japan: A Material Flow Account for the Period From 1878 to 2005. *Journal of Industrial Ecology*, **15**, 877–892. doi: 10.1111/j.1530-9290.2011.00376.x
- Krausmann F., Haberl H., Erb K.-H., Wiesinger M., Gaube V., & **Gingrich S.** (2009) What determines geographical patterns of the global human appropriation of net primary production? *Journal of Land Use Science*, **4**, 15–33. doi: 10.1080/17474230802645568
- Krausmann F., Schaffartzik A., Mayer A., Eisenmenger N., **Gingrich S.**, Haberl H., & Fischer-Kowalski M. (2015) La société industrielle ne connaît aucune dématérialisation depuis le XIXe siècle. *La Revue Durable* **53**, 22–24.
- Kuskova P., **Gingrich S.**, & Krausmann F. (2008) Long term changes in social metabolism and land use in Czechoslovakia, 1830–2000: An energy transition under changing political regimes. *Ecological Economics*, **68**, 394–407. doi: 10.1016/j.ecolecon.2008.04.006
- Lauk C., Haberl H., Erb K.-H., **Gingrich S.**, & Krausmann F. (2012) Global socioeconomic carbon stocks in long-lived products 1900–2008. *Environmental Research Letters*, **7**, 34023. doi: 10.1088/1748-9326/7/3/034023
- Niedertscheider M., **Gingrich S.**, & Erb K.-H. (2012) Changes in land use in South Africa between 1961 and 2006: an integrated socio-ecological analysis based on the human appropriation of net primary production framework. *Regional Environmental Change*, **12**, 715–727. doi: 10.1007/s10113-012-0285-6
- Schaffartzik A., Mayer A., **Gingrich S.**, Eisenmenger N., Loy C., & Krausmann F. (2014) The global metabolic transition: Regional patterns and trends of global material flows, 1950–2010. *Global Environmental Change*, **26**, 87–97. doi: 10.1016/j.gloenvcha.2014.03.013

Singh S.J., Krausmann F., **Gingrich S.**, Haberl H., Erb K.-H., Lanz P., Martinez-Alier J., & Temper L. (2012) India's biophysical economy, 1961–2008. Sustainability in a national and global context. *Ecological Economics*, **76**, 60–69. doi: 10.1016/j.ecolecon.2012.01.022

Tello E., Galán E., Sacristán V., Cunfer G., Guzmán G.I., González de Molina M., Krausmann F., **Gingrich S.**, Padró R., Marco I., & Moreno-Delgado D. (2016) Opening the black box of energy throughputs in farm systems: A decomposition analysis between the energy returns to external inputs, internal biomass reuses and total inputs consumed (the Vallès County, Catalonia, c.1860 and 1999). *Ecological Economics*, **121**, 160–174. doi: 10.1016/j.ecolecon.2015.11.012

Weisz U., **Gingrich S.**, Winiwarter V., Radits F., Soukup-Altrichter K., Schmied C., Spranz A., Antić A., Bosina C., & Ecker I. (2011) Schüler (innen) auf der Suche nach den Wurzeln unserer Umweltprobleme. Umwelthistorische Forschung in technischen Schulen als Beitrag zur Bildung für nachhaltige Entwicklung. *GAIA-Ecological Perspectives for Science and Society*, **20**, 122–128. doi: 10.14512/gaia.20.2.9

## Book chapters (selection)

Gizicki-Neundlinger M., **Gingrich S.**, & Güldner D. (2017) Sustainability Challenges of Pre-industrial Local Food Systems—Insights from Long-Term Socio-Ecological Research in Austria. In: Fraňková, E., Haas, W., Singh, S.J. (Eds.), *Socio-Metabolic Perspectives on the Sustainability of Local Food Systems*. Springer, pp. 165–191.

**Gingrich S.**, Lauk C., Kastner T., Krausmann F., Haberl H., & Erb K.-H. (2016) A Forest Transition: Austrian Carbon Budgets 1830–2010. In: Haberl, H., Fischer-Kowalski, M., Krausmann, F., Winiwarter, V. (Eds.), *Social Ecology: Society-Nature Relations across Time and Space*. Springer, pp. 417–431.

**Gingrich S.**, Schmid M., Gradwohl M., & Krausmann F. (2013) How Material and Energy Flows Change Socio-natural Arrangements: The Transformation of Agriculture in the Eisenwurzen Region, 1860-2000, in: Singh, S.J., Haberl, H., Chertow, M., Mirtl, M., Schmid, M. (Eds.), *Long Term Socio-Ecological Research. Studies in Society - Nature Interactions Across Spatial and Temporal Scales, Human - Environment Interactions*. Springer, pp. 297–313.

Haberl H., Erb K.-H., Gaube V., **Gingrich S.**, & Singh, S.J. (2013) Socioeconomic Metabolism and the Human Appropriation of Net Primary Production: What Promise Do They Hold for LTSER?, in: Singh, S.J., Haberl, H., Chertow, M., Mirtl, M., Schmid, M. (Eds.), *Long Term Socio-Ecological Research. Studies in Society - Nature Interactions Across Spatial and Temporal Scales*. Springer, pp. 29–52.

Haidvogel G., & **Gingrich S.** (2010) Wasserstraße Donau: Transport Und Handel Im Machland Und Auf Der Donau Im 19. Und 20. Jahrhundert, in: Winiwarter V., Schmid, M. (Eds.), *Umwelt Donau: Eine Andere Geschichte. Katalog Zur Ausstellung Des Niederösterreichischen Landesarchivs Im Ehemaligen Pfarrhof In Ardagger Markt*. NÖ Institut für Landeskunde, pp. 91–103.

## Special Issue

**Gingrich S.**, Cunfer G., & Aguilera E. (2018) Energy transitions in agroecosystems: Long-term changes in agroecosystem energy efficiencies on both sides of the Atlantic. *Regional Environmental Change*, **18**, pp. 929–1101.