

Dr. Dmitry SCHEPASCHENKO

Senior Research Scholar

- Agriculture, Forestry, and Ecosystem Services (AFE)
Biodiversity and Natural Resources Program (BNR)
- Novel Data Ecosystems for Sustainability (NODES)
Advancing Systems Analysis Program (ASA)

International Institute for Applied Systems Analysis (IIASA)
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Bio

Dr. Dmitry Schepaschenko has over 30 years of research experience in forest ecology, forest management, and remote sensing. He actively participates in international research networks such as [IBFRA](#) (International Boreal Forest Research Association) and [IUFRO](#) (International Union of Forest Research Organizations). His recent projects have focused on global and regional land cover, forest and biomass mapping; carbon accounting of Northern Eurasia; remote sensing applications; and modeling the structure, productivity, and growth of forests; as well as adaptation and mitigation strategies under global change.

Dr. Schepaschenko earned his Master's degree in Forestry in 1988 from the Moscow State Forest University, his PhD in Soil Science in 1993 from the Dokuchaev Soil Science Institute in Moscow, and his Doctor Habilitation degree in Ecology in 2005 from the Moscow State Forest University.

Publications	Over 100 peer-reviewed publications including journals such as <i>Science</i> , <i>Nature</i> , <i>Nature Ecology & Evolution</i> , <i>Nature Geoscience</i> , <i>Nature Plants</i> , <i>Nature Scientific Reports</i> , <i>Nature Scientific Data</i> , <i>PNAS</i> , <i>Remote Sens. Environ.</i> , <i>Glob. Change Biol.</i>
H-factor	51 (Google Scholar), 37 (Scopus), 35 (WoS)
ORCID ID	0000-0002-7814-4990

Major Scientific Interests

- Global land cover, forest cover, cropland, and biomass mapping/analysis
- Remote sensing and crowdsourcing applications
- Carbon accounting for terrestrial ecosystems (with a special focus on Russia and Ukraine)
- Ecosystems ecology
- Modeling of structure, productivity, and growth of forests
- Soil carbon and soil respiration
- Adaptation and mitigation under global change

Editorials

- **Member of editorial board:** Forestry Ideas, MDPI Forests, Nature Scientific Data, Siberian

Forest Journal.

- **Guest editor:** Environ. Res. Lett., MDPI Remote Sens., MDPI Land.
- **Reviewed papers for WoS Q1 journals:** *Applied Geography, Biological Conservation, Biogeosciences, Catena, Ecosystems, Environ. Res. Lett., Eur. J. For. Res., IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., Int. J. Appl. Earth Obs. Geoinf., J. R. Soc. Interface, ISPRS J. Photogramm. Remote Sens., For. Ecol. Manag., Forests, Nature Plants, PLoS One, Scientific Data, PNAS, Remote Sens., Remote Sens. Environ.*
- **Reviewed grant proposals:** Mega grants by the Ministry of Education and Science of Russian Federation; OeAD (Austrian centre for European and international mobility and cooperation programmes); National Science Foundation (NSF, USA), Russian Science Foundation.

Professional Career

- 2007 – present **Research Scholar**, (2018) **Senior Research Scholar**, *International Institute for Applied Systems Analysis (IIASA)*, Laxenburg, Austria.
- 1993 – 2016 **Lecturer, Associate Professor** (1996), **Professor** (2004), guest Professor (2007) – *Moscow State Forest University*, Department of Soil Science. Mytischki, Moscow reg., Russia
- 1995: Scholarship for Young Scientists, *International Institute for Applied Systems Analysis*, Laxenburg, Austria
- 1990 – 1993 **PhD Candidate**, Soil Science. *Dokuchaev Soil Science Institute*, Moscow, Russia
- 1988 – 1990 **Research assistant** – *Moscow State Forest University*, Department of Forest Mensuration and Management.
- 1983 – 1988 **Undergraduate**, Forestry and Pedology. *Moscow State Forest University*, Mytischki, Russia.

Selected Research Projects

- 2023 – 2026 **EYE-CLIMA: Verifying Emissions of Climate Forcers** (<https://iiasa.ac.at/projects/eye-clima>) Horizon Europe funded project under the coordination of NILU (Norway). Role: **task leader**
- 2015 – 2024 **IFBN/FOS/GEO-TREES: International Forest Biomass Network** (<http://forest-observation-system.net/>). IIASA leading project funded by European Space Agency, contract 4000114425/15/NL/FF/gp. Role: **PI**
- 2018 – 2024 **CCI Biomass** (<http://cci.esa.int/biomass>). Funding: European Space Agency, contract 4000113100/14/I-NB. Leading partner: Aberystwyth Univ., UK. Role: contributor, **PI** at IIASA
- 2019 – 2022 **ALPTREES** (<https://www.alpine-space.eu/projects/alptrees/en/home>), An EC/Alpine Space funded Project on “Sustainable use and management of non-native trees in the alpine region”. Role: **task leader**
- 2017 – 2021 **RESTORE+ | Assessing Landscape Restoration in Indonesia and Brazil** www.restoreplus.org, funded by the German BMUB/International Climate Initiative IKI. Role: **task leader**

- 2019 - 2020 **NatureMap** (<https://naturemap.earth/>). Funding: Norwegian International Climate and Forest Initiative (NICFI) of the Norwegian Ministry of Climate and Environment). Role: **task Leader**
- 2014 – 2017 **DUE GlobBiomass** (<http://globbiomass.org/>). Funding: European Space Agency, contract 4000113100/14/I-NB. Leading partner: Friedrich Schiller University Jena, Germany. Role: contributor.
- 2010 - 2013 **BalkanGEONet** (<https://cordis.europa.eu/project/id/265176>) – Towards Inclusion of Balkan Countries into Global Earth Observation Initiative (FP7, no. 265176). Role: contributor, **PI** at IIASA.

Selected peer-reviewed publications

(extended list available on [Google Scholar](#) or [IIASA pure](#) or [ORCID 0000-0002-7814-4990](#))

- Huang Y., Song X., Wang Y.-P., et al. (2024). [Size, distribution, and vulnerability of the global soil inorganic carbon](#). *Science* 384 (6692) 233-239.
- Yang H., Wang S., Son R., et al. (2024). [Global patterns of tree wood density](#). *Global Change Biology* 30 (3) e17224.
- Araza A., Herold M., de Bruin S., et al. (2023). [Past decade above-ground biomass change comparisons from four multi-temporal global maps](#). *International Journal of Applied Earth Observation and Geoinformation* 118 e103274.
- Labrière N., Davies S.J., Disney M.I., et al. (2023). [Toward a forest biomass reference measurement system for remote sensing applications](#). *Global Change Biology* 29 (3) 827-840. DOI: 10.1111/gcb.16497.
- Fan L., Wigneron J.P., Ciais P., et al. (2022) [Siberian carbon sink reduced by forest disturbances](#). *Nature Geoscience*, DOI: 10.1038/s41561-022-01087-x.
- Lesiv M., Schepaschenko D., Buchhorn M., et al. (2022) [Global forest management data for 2015 at a 100 m resolution](#). *Scientific Data* 9, 199. DOI: 10.1038/s41597-022-01332-3.
- Gatti R.C., Reich P.B., Gamarra J.G.P., et al. (2022) [The number of tree species on Earth](#). *PNAS*, 119(6), e2115329119. DOI: 10.1073/pnas.2115329119.
- Schepaschenko D., Moltchanova E., Fedorov S., et al. (2021). [Russian Forest sequesters substantially more carbon than previously reported](#). *Scientific Reports* 11, 12825. DOI: 10.1038/s41598-021-92152-9.
- Schepaschenko D., Chave J., Phillips O.L., et al. (2019). [The Forest Observation System, building a global reference dataset for remote sensing of forest biomass](#). *Scientific Data* 6 (1): e198. DOI:10.1038/s41597-019-0196-1.
- Schepaschenko D., See L., Lesiv M., et al. (2019). [Recent Advances in Forest Observation with Visual Interpretation of Very High-Resolution Imagery](#). *Surveys in Geophysics* 40 (4): 839-862. DOI: 10.1007/s10712-019-09533-z.
- Steidinger B.S., Crowther T.W., Liang J., et al. (2019). [Climatic controls of decomposition drive the global biogeography of forest-tree symbioses](#). *Nature* 569 (7756): 404-408. DOI: 10.1038/s41586-019-1128-0.
- Schepaschenko D., Moltchanova E., Shvidenko A., et al. (2018) [Improved Estimates of Biomass Expansion Factors for Russian Forests](#). *Forests*, 9(6), 312. DOI: 10.3390/f9060312.
- Schepaschenko D., Fritz S., See L., Laso Bayas J.C., Lesiv M., Kraxner F., Obersteiner M. (2017). [Comment on "The extent of forest in dryland biomes"](#). *Science* 358 (6362): eaao0166. DOI: 10.1126/science.aao0166.
- Schepaschenko D., Shvidenko A., Usoltsev V., et al. (2017) [A dataset of forest biomass structure for Eurasia](#). *Scientific Data* 4: 170070. DOI: 10.1038/sdata.2017.70.
- Fritz S., Schepaschenko D., See L. (2016) [Carbon tracking: Limit uncertainties in land emissions](#). *Nature*,

- 534(7609): 621. DOI: 10.1038/534621e.
- Gauthier S., Bernier P., Kuuluvainen T., Shvidenko A.Z., Schepaschenko D.G. (2015) [Boreal forest health and global change](#). *Science*, 349: 819-822. DOI: 10.1126/science.aaa9092.
- Schepaschenko D., See L., Lesiv M. et al. (2015). [Development of a global hybrid forest mask through the synergy of remote sensing, crowdsourcing and FAO statistics](#). *Remote Sensing of Environment*, 162: 208-220. DOI: 10.1016/j.rse.2015.02.011.
- Schepaschenko D.G., Shvidenko A.Z., Lesiv M.Yu., Ontikov P.V., Shchepashchenko M.V., Kraxner F. (2015) [Estimation of Forest Area and its Dynamics in Russia Based on Synthesis of Remote Sensing Products](#). *Contemporary Problems of Ecology*, 8(7): 811–817. DOI: 10.1134/S1995425515070136.
- Mukhortova L., Schepaschenko D., Shvidenko A., McCallum I., Kraxner F. (2015) [Soil contribution to carbon budget of Russian forests](#). *Agricultural and Forest Meteorology*, 200: 97–108. DOI: 10.1016/j.agrformet.2014.09.017.
- See L., Schepaschenko D., Lesiv M. et al. (2015). [Building a hybrid land cover map with crowdsourcing and geographically weighted regression](#). *ISPRS Journal of Photogrammetry and Remote Sensing*. 103: 48-56. DOI: 10.1016/j.isprsjprs.2014.06.016.
- Turner M., Beer C., Santoro M., Carvalhais N., Wutzler T., Schepaschenko D., et al. (2014) [Carbon stock and density of northern boreal and temperate forests](#). *Global Ecology and Biogeography*. 23(3): 297-310. DOI: 10.1111/geb.12125.
- Schepaschenko D.G., Mukhortova L.V., Shvidenko A.Z., Vedrova E.F. (2013) [The Pool of Organic Carbon in the Soils of Russia](#). *Eurasian Soil Science* 46(2): 107-116. DOI: 10.1134/S1064229313020129.
- Dolman A.J., Shvidenko A., Schepaschenko D. et al. (2012) [An estimate of the terrestrial carbon budget of Russia using inventory-based, eddy covariance and inversion methods](#). *Biogeosciences* 9: 5323-5340. DOI: 10.5194/bg-9-5323-2012.
- Fritz S., McCallum I., Schill C., Perger C., See L., Schepaschenko D., van der Velde M., Kraxner F., Obersteiner M. (2012) [Geo-Wiki: An online platform for improving global land cover](#). *Environmental Modelling & Software* 31: 110-123. DOI: 10.1016/j.envsoft.2011.11.015
- Schepaschenko D., McCallum I., Shvidenko A., Fritz S., Kraxner F., Obersteiner M. (2011) [A new hybrid land cover dataset for Russia: a methodology for integrating statistics, remote sensing and in situ information](#). *Journal of Land Use Science* 6(4): 245-259. DOI: 10.1080/1747423X.2010.511681.
- Shvidenko A.Z., Shchepashchenko D.G., Vaganov E.A. et al. (2011) [Impact of Wildfire in Russia between 1998–2010 on Ecosystems and the Global Carbon Budget](#). *Doklady Earth Sciences*. 441(2): 1678–1682. DOI: 10.1134/S1028334X1.
- Shvidenko A., Schepaschenko D., McCallum I., Nilsson S. (2010) [Can the uncertainty of full carbon accounting of forest ecosystems be made acceptable to policymakers?](#) *Climatic Change*. 103: 137-157. DOI: 10.1007/s10584-010-9918-2.
- Shvidenko A., Schepaschenko D., Nilsson S., Bouloui Yu. (2008) [Tables and models of growth and productivity of forests of major forest forming species of Northern Eurasian](#). Moscow. Federal Agency of forest management. International Institute for Applied Systems Analysis. 886 pp.
- Shvidenko A., Schepaschenko D., Nilsson S., Bouloui Yu. (2007) [Semi-empirical models for assessing biological productivity of Northern Eurasian forests](#). *Ecological Modelling*. 204: 163-179. DOI: 10.1016/j.ecolmodel.2006.12.040.
- Lapenis A., Shvidenko A., Schepaschenko D. et al. (2005) [Acclimation of Russian forests to recent changes in climate](#). *Global Change Biology*. 11: 2090-2102. DOI: 10.1111/j.1365-2486.2005.001069.x.