EDITORIAL



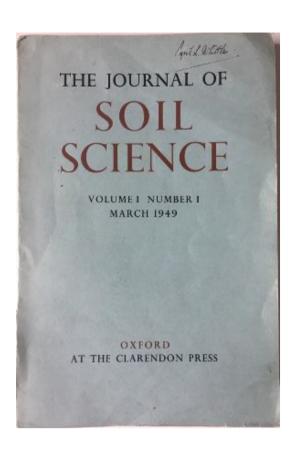
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Going Platinum: The European Journal of Soil Science at 75

The European Journal of Soil Science (EJSS) is published by Wiley on behalf of the British Society of Soil Science (BSSS) to fulfil its original mission to 'publish an annual publication'. The Journal for Soil Science published its first issue in March 1949 (Figure 1, left) before a change of name to the European Journal of Soil Science (EJSS) in 1994. The current issue (Volume 75, Issue 2, March-April 2024; Figure 1, right) therefore marks our 75th Anniversary. In this Editorial, we (the Senior Editorial Team of the EJSS; Figure 2) review briefly how the

journal has evolved over the last three-quarters of a century and look forward to both the challenges and opportunities that the future holds.

We begin by thanking the Authors, past and present, who trust us to manage their manuscripts through peer review to ultimate publication and without whom we would not exist. We are indebted to the support of our Editorial Board in their role as Associate Editors who collaborate with expert Reviewers to provide rigorous peer review of manuscripts submitted to the *EJSS* as a voluntary



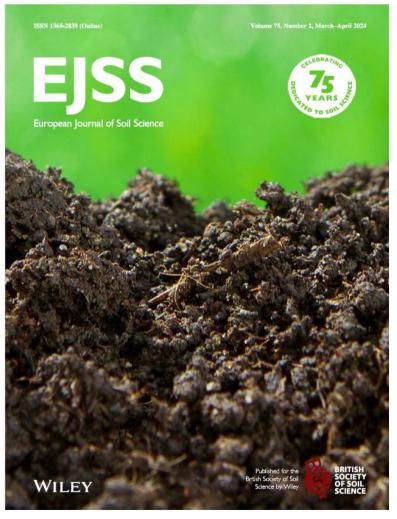


FIGURE 1 Photograph of the front cover of Volume 1, Number 1 of the *Journal of Soil Science* published in March 1949 (left), and new online image for the current issue of the *European Journal of Soil Science* (EJSS) Volume 75, Issue 2, March–April 2024 (right).

service to the wider soil science community, and on whose generosity the quality of scientific publishing depends.

Six years ago, an Editorial written by current and recent presidents of the BSSS to celebrate the BSSS' 70th Anniversary reviewed how research themes had changed over the lifetime of the Society (Otten et al., 2018). They noted a shift from reporting on specific fundamental processes in soil, its formation, the classification of soil types and description of chronosequences, to the recent focus on soils as contributors to larger-scale system function. The Authors also remarked on the importance of early research papers that provided the foundations for the contemporary understanding of soil science.

The *Journal of Soil Science* published 2040 papers between 1949 and 1993 that have been cited nearly 87,000 times (Figure 3) and continue to be cited at a rate of \sim 2000 times per year. The sustained relevance of those early papers is confirmed by our review of the top ten most cited papers from the *Journal of Soil Science* (Table 1, left)

Highlights

- The European Journal of Soil Science (EJSS) celebrates its 75th Anniversary in March 2024.
- An overview of the evolution of the EJSS since first issue as *Journal of Soil Science* in March 1949.
- Recent and future innovations support our international Authors and increasingly diverse readership.
- We thank the Editorial Board and Reviewers and highlight opportunities for Early Career Researchers.

that are still being cited in 2024, despite publication dates spanning 1955 to 1985. Comparison with the top ten most cited papers in the *EJSS* (Table 1, centre) reveals perennial













Prof Jennifer Dungait (Editor in Chief)

Dr Mark Farrell (Deputy Editor)

Prof Gerard Heuvelink (Deputy Editor)

Prof Hailong He (Deputy Editor)

Prof Olaf Schmidt (Deputy Editor)

Dr Dan Evans (Chair – ECR Editorial Board)

FIGURE 2 Current Senior Editorial Team of the EJSS.

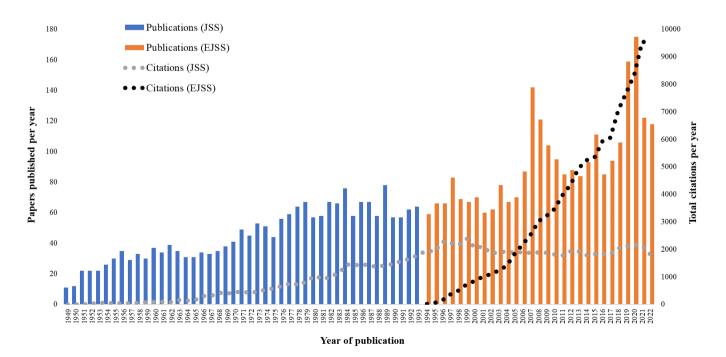


FIGURE 3 Number of papers published per year and citations of papers per year in the *Journal of Soil Science* and *European Journal of Soil Science* from 1949 to 2022. Data derived from Clarivate Web of Science, Copyright Clarivate 2024. Accessed 26.02.2024. All rights reserved.

themes in soil science: soil organic matter and carbon, nutrients (principally nitrogen and phosphorus), soil structure and hydrology, and the emergence of soil biology (including plant-soil interactions) and its importance for soil function as a contemporary theme of soil science research.

The *EJSS* continues to publish papers about any aspect of soil science research that provides novel insights into soil processes and its application and is of international relevance. Our contributing Authors derived from every inhabited continent; in 2023, based on the nationality of the first or corresponding author, most Authors were European (\sim 50%) or Asian (\sim 40%) with Authors from North America, South America, Oceania and Africa accounting collectively for \sim 10%.

To meet the needs of our diverse Authors and support their publishing journey, we are keen to adopt new ways of working and developing technologies. The range of article types accepted in the *EJSS* has expanded from standard Research Articles, Short Communications, Reviews and Letters to the Editor, to include Opinions, Data Articles (Rossiter et al., 2022) and most recently Method Articles, and we are currently trialling Survey Articles (e.g., Veenstra et al., 2023). In 2022, we moved to Free Format submission via our 'drag and drop' software to improve ease of submission and online only Continuous Publication to improve the speed of publication of accepted articles.

The potential of online publishing for the dissemination of research and its impact has been enormous: the number of full-text views of papers published in the *EJSS* rose dramatically from 260,000 in 2020 to 415,000 at the end of 2023. The most popular paper is 'LUCAS Soil: the largest expandable soil dataset for Europe: a review' by Orgiazzi et al. (2017) which has been downloaded more than 20,000 times and is number 1 in the top ten Altmetric Attention Scores for papers published in the *EJSS* (Table 1, right). We are keen to explore similar opportunities to support our authors and highlight their research, and hope that our developing Early Career Researcher (ECR) Editorial Board will be a source of inspiration for our future publishing strategy.

One of the most profound changes to soil science in recent times is the much wider readership that can rapidly access information about soil science publications. For instance, the *EJSS X* (previously Twitter) account @ejsoilscience set up in 2019 has over 4500 followers, and many *EJSS* papers are in the top 5% of all research outputs scored by Altmetric (Table 1, right). This more immediate metric reveals current engagement with *EJSS* papers relevant to societal interests in soil science which include soil health (Harris et al., 2022) and carbon sequestration (Batjes, 1996; Berthelin et al., 2022), human health

(Steffan et al., 2017; Li et al., 2018), the impact of war on soils (Williams & Rintoul-Hynes, 2022), and the relationships between soil and plant roots (Gregory, 2022).

Soils play a major role in addressing a broad range of societal issues of our time (Keesstra et al., 2024). New tools for understanding the impact of EJSS publications show a wider appetite for information about soil science by readers beyond the conventional research arena, and indicates that the Clarivate Impact Factor used widely by academics to value research impact is insufficient in isolation. The EJSS has published 2804 papers since 1994 that have been cited more than 111,000 times, but this must be viewed in the frame that nearly 70,000 research articles on the topic of 'soil' were published in 2022 alone (Web of Science data, accessed 26/02/2024). Subsequently, from 2023, we have displayed a wider range of metrics according to the Declaration on Research Assessment (DORA) to provide a more comprehensive overview of the research impact of the EJSS https://bsssjournals. onlinelibrary.wiley.com/journal/13652389/journalmetrics.

Fairness in soil science publishing is a driving imperative for the EJSS, and we subscribe to the recommendations of the Committee on Publishing Ethics (COPE) so Authors can be sure that they will be treated according to internationally accepted standards of fairness and integrity during peer review of their paper. A rigorous attitude to peer review is now critical with the proliferation of scientific fraud by 'paper mills' enabled by Artificial Intelligence Generated Content (AIGC), such as ChatGPT and others based on large language models (LLMs), that threatens the value and integrity of science publishing more broadly (Byrne & Christopher, 2020). All Authors must provide their ORCID iD and CRediT (Contributor Roles Taxonomy) classifications as a prerequisite for all EJSS submissions, which then undergo pre-screening by iThenticate plagiarism software. Since 2022, all figures in manuscripts accepted for publication are screened for plagiarism and image tampering. We look forward to the development of new digital screening tools to combat fraudulent activity. However, recent experience shows that Editors' and Reviewers' expertise, practical knowledge and shrewdness remains the best tool to spot 'sham papers'.

Meaningful advances in global soil science can only happen if all researchers contribute their research and datasets to the collective pool of knowledge; thus, the *EJSS* committed to the open data policy to Mandate Data Sharing in 2019 so that all readers can gain access to data that supports the outputs of the papers we publish. The number of Gold fully Open Access articles published in the *EJSS* that are freely available to read, download and share has grown from 7% in 2019 to 45% in 2023, but

TABLE 1 Current ten most highly cited papers published in the *Journal of Soil Science* and *European Journal of Soil Science* (EJSS) on the Web of Science and Altmetric Attention Scores for the EJSS.

#	Journal of Soil Science (1949–2023)	European Journal of Soil Science (1994–2023)	European Journal of Soil Science
	Web of Science citations	Web of Science citations	Altmetric Attention Score
1	Tisdall & Oades (1982) Organic matter and water-stable aggregates in soils	Batjes (1996) Total carbon and nitrogen in the soils of the world	Orgiazzi et al. (2017) LUCAS Soil, the largest expandable soil dataset for Europe: a review
2	Ball (1964) Loss-on-ignition as an estimate of organic matter and organic carbon in non-calcareous soils	Lützow et al. (2006) Stabilization of organic matter in temperate soils: mechanisms and their relevance under different soil conditions - a review	Steffan et al. (2017) The effect of soil on human health: an overview
3	Burgess & Webster (1980) Optimal interpolation and isarithmic mapping of soil properties: 1. The semivariogram and punctual kriging	Nannipieri et al. (2003) Microbial diversity and soil functions	Williams and Rintoul-Hynes (2022) Legacy of war: Pedogenesis divergence and heavy metal contamination on the WW1 front line a century after battle
4	Jenkinson, Fox & Rayner (1985) Interactions between fertilizer nitrogen and soil nitrogen—the so-called 'priming' effect	Le Bissonnais (1996) Aggregate stability and assessment of soil crustability and erodibility: 1. Theory and methodology	Panagos et al. (2022) European Soil Data Centre 2.0: Soil data and knowledge in support of the EU policies
5	Hingston, Quirk & Posner (1972) Anion adsorption by goethite and gibbsite. 1. Role of the proton in determining adsorption envelopes	Jarvis (2007) A review of non-equilibrium water flow and solute transport in soil macropores: principles, controlling factors and consequences for water quality	Harris et al. (2022) A new theory for soil health
6	Saunders & Williams (1955) Observations on the determination of total organic phosphorus in soils	Christensen (2001) Physical fractionation of soil and structural and functional complexity in organic matter turnover	Batjes (1996) Total carbon and nitrogen in the soils of the world
7	Mullins (1977) Magnetic susceptibility of soil and its significance in soil science - a review	Smith et al. (2003) Exchange of greenhouse gases between soil and atmosphere: interactions of soil physical factors and biological processes	Berthelin et al. (2022) Soil carbon sequestration for climate change mitigation: Mineralization kinetics of organic inputs as an overlooked limitation
8	Quirk & Scholefield (1955) The effect of electrolyte concentration on soil permeability	Blouin et al. (2013) A review of earthworm impact on soil function and ecosystem services	Berhe & Ghezzhai (2020) Race and racism in soil science
9	Bache & Williams (1971) A phosphate sorption index for soils	Kaiser & Guggenberger (2003) Mineral surfaces and soil organic matter	Li et al. (2018) Urban soil and human health: a review
10	McLaren & Crawford (1973) Studies on copper. 1. Fractionation of copper in soils	Van Groenigen et al. (2010) Towards an agronomic assessment of N_2O emissions: a case study for arable crops	Gregory (2022) RUSSELL REVIEW Are plant roots only 'in' soil or are they 'of' it? Roots, soil formation and function

Source: www.webofscience.com and www.altmetric.com (accessed 26/02/2024).

we retain the Hybrid Open Access model of publication to enable Authors who cannot pay the Article Processing Charge (APC) to publish their articles for free. This model supports Green Open Access conditions that allows Authors to self-archive the originally submitted version of an article prior to peer review, and the accepted version of an article prior to the final published version after a 12-month embargo period.

Representing Author diversity and providing equal opportunities to publishing is a primary concern for the *EJSS*. In 2020 and 2021, we published two Opinion papers that explored barriers to access and achievement in soil science research and publishing from thought leaders in researcher diversity and inclusion in soil science: '*Race and racism in soil science*' (Berhe & Ghezzehai, 2020) and '*International gender equity in soil science*'

(Dawson et al., 2021). The former received particular attention on social media and is in the top 5% of all research outputs scored by Altmetric (Table 1, right). As a priority, we endeavour to mirror our Authors' diversity in the membership of our Editorial Board (currently 84 Associate Editors, from 71 institutions in 21 countries), though we have yet to achieve a better balance of female: male representation (currently $\sim 30\%$ female). We are always pleased to hear from potential candidates, so please get in touch if you are interested joining the Editorial Board.

Our special focus for the EJSS 75th Anniversary is the establishment of an ECR Editorial Board to mentor ECRs who want to develop skills in research article review and editing, but also to benefit from their active involvement in the development of the future strategy for the EJSS. Our focus on engagement with ECRs has grown over the last few years, starting with a special issue to support the UK STARS (Soils Training And Research Studentships) programme in 2020/21 (Haygarth et al., 2021). A large team of international ECRs led by Portell, Sauzet, et al. (2021) responded to Baveye's Russell Review and accompanying Opinion on 'bypass and hyperbole' in soil science (2021a, 2021b) and Bouma's subsequent Letter to the Editor (2021). This team later curated a Virtual Special Issue of ECR-led papers called 'Celebrating the work of Early Career Researchers in Soil Science' to highlight some of the underreported achievements of ECRs who have published in the EJSS (Portell, Schnee, et al., 2021) which became the theme for a subsequent BSSS 'Zoom into Soil' session https://soils. org.uk/news/zoomintosoilcelebratingtheworkofecrs/. More recently, the EJSS hosted a Special Issue to support the Soil Observatory (EUSO) Young Researchers Forum in 2021, introduced in the Editorial entitled 'Let's give a voice to young soil researchers' (Panagos & Orgiazzi, 2023). We look forward to strengthening our partnerships with ECRs as Authors and potential journal editors of the future.

The way that soil science has been published over the last 75 years has changed radically, particularly over the last decade with the advent of novel media for dissemination of soil science research beyond paper-based journal formats. Through this time, the EJSS has supported an increasingly multi-disciplinary and global community of soil scientists to report peer-reviewed research that has advanced the understanding of soil physics, chemistry and biology, modelling, geostatistics and pedometrics. As we experience the global challenges of the Anthropocene, a wider societal understanding that soils are fundamental to ecosystem functions that support human society, and the legacy of the impact of human activity on soil functioning, is only possible with an everexpanding body of soil science research and its publication (Evans et al., 2022). We are excited that the EJSS

continues to support the worldwide, transdisciplinary community of soil researchers in their quest to build an holistic understanding of soil to benefit wider society at this critical juncture in human history.

The future of the *EJSS* relies on the continued interest of our Authors to publish with the *EJSS*, the support and commitment of our Editorial Board and Reviewers to uphold the rigour of peer review in an increasingly competitive publishing environment, and the investment of ECRs who are the future of soil science research. And so, we start where we began, by thanking you for your support for the *EJSS* over the last three-quarters of a century and hoping for your continuing support for the next 75 years and whatever changes that may bring.

ACKNOWLEDGEMENTS

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The BSSS is a member of the Society Publishers' Coalition (SocPCA; https://www.socpc.org/) who publish as part of their charitable objectives and who reinvest the surplus from their publishing into the disciplinary communities they serve, so BSSS members enjoy free access to the *EJSS* as a member benefit and can also support the BSSS by choosing to publish their soil science research in the *EJSS*. Visit the BSSS website for more information about membership: https://soils.org.uk/

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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