

Newsletter of the Anthropocene Working Group



Anthropocene
Working Group

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activities 2022**
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<http://quaternary.stratigraphy.org/workinggroups/anthropocene/>

AWG Newsletter 2022

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Chair's Column

Dear all,

I can only extend my utmost appreciation of the hard work undertaken during 2022 by the teams involved in the analysis of the 12 GSSP candidate sites in order to keep within the tight deadlines for completion of analysis. There is no doubt that the compilation of so many diverse physical, chemical and biological markers across distinct environments and distributed globally provides a very persuasive argument in favour for the recognition of the Anthropocene as a geological time unit. The set of papers for each site, along with an introductory summary article, published in *The Anthropocene Review* provide an indispensable resource for future investigation of the geological expression of the Anthropocene. The difficulty comes with the process of selecting just one candidate GSSP site from such a strong field. That process of selection by voting members of the AWG commenced with a formal interval of discussion from 3rd October to 16th November, followed by a first round of voting from 17th November to 16th December. In parallel, a binding vote on the rank of the Anthropocene was undertaken and agreed with overwhelming support at epoch/series level. The voting identified three popular sites with one strong front-runner, though not with the 60% or more support to be automatically selected. At the time of compilation of this column, discussions have been held in advance of the start of the second round of voting, which commenced on 21st January 2023. It is unclear whether a requisite support for one site will be achieved in this second round, or whether a third round will be required which would extend any announcement into late April 2023.

A significant highlight of the year was the AWG meeting at the Haus der Kulturen der Welt (HKW) in Berlin as part of an “*Unearthing the Present*” event from the 18th to 22nd May. As ever, HKW were wonderful hosts and their excellent coordination ensured that the meeting proved a great success. In addition to two days of presentations and discussion around the advanced progress of the 12 candidate GSSP sites, many of the principal investigators were able to be involved with public discussions about their work through a series of live ‘core readings’. The event coincided with the opening of the *Earth Indices* exhibition by Giulia Bruno and Armin Linke that continued through to the 17th October. The installation drew upon the contribution of GSSP project teams to illustrate their working methodologies to a wider audience. An outstanding feature of all the research teams has been their positive attitude to disseminating their work outside of the geological community and giving their time to many media requests. Our thanks go out to our colleagues and friends at HKW and Max Planck Institute for the History of Science (MPIWG) for hosting and facilitating the meeting so successfully, but with a hint of sadness given that the team involved in organising this and many previous meetings left HKW at the end of their term. On behalf of the AWG, we extend our warm appreciation of the contribution of Bernd Scherer (Director), Katrin Klingan (Curator and Head of Department Literature and Humanities), Carlina Rossée, Evi Chantzi and Georg Schaefer (Project Coordinator) and many more, who during nearly a decade of collaboration with the AWG have helped significantly to facilitate advancement in the debate around the topic. Without their support it would not have been possible to progress so quickly to a point where we have a diverse selection of GSSP candidates to choose from. It is just a shame that it was not possible to have selected the candidate site before the HKW team disbanded at the end of December.

Another notable event was the SQS-sponsored AnthroFlor international symposium on the Anthropocene in Florence from 8th to 10th September. Again, we extend our appreciation for the great efforts of Adele Bertini and her colleagues in organizing the meeting in such a wonderful venue. Aimed as an opportunity for open debate primarily amongst SQS members concerning progress of AWG research and to develop discussion about any concerns or questions they should have. In the end the event was attended by a disappointingly small number of participants, largely by AWG members and keen researchers from the University of Firenze who provided wonderful engagement and coordinated memorable visits to the Natural History Museum, Botanical Gardens and a tour of the city. Science advances through vigorous debate and this was a missed opportunity to initiate such discussion.

The AWG activities in 2023, in addition to completing our internal vote, will focus on the production of a formal proposal for submission to SQS. In addition to detailing the proposed GSSP, our intention is also to agree upon and define a number of Standard Auxiliary Boundary Stratotypes. However, a significant component of the report will have to be an attempt to succinctly summarise the vast library of publications produced by AWG to support the case for the Anthropocene to be recognised as a component of the International Chronostratigraphic Chart. This will be a major endeavour and I look forward to the opportunity to working with AWG colleagues over the coming year to develop this case.

Finally, during late stages in the compilation of this Newsletter, we received the terribly sad news that Will Steffen's passed away on the 29th January, two years and one day after the loss of Paul Crutzen. In the following obituary, we wish to express not only the sorrow of losing such an influential scientist, but the loss of a close colleague and vigorous contributor to our group's activities. RIP Will!

Colin Waters
Chair, Anthropocene Working Group

In Memoriam: Will Steffen

Will Steffen (1947-2023) and the Anthropocene

Will Steffen, Emeritus Professor, Fenner School of Environment and Society, Australian National University (ANU), Canberra and one of the founding members of the AWG in 2009, sadly passed away on the 29th of January 2023 after a long illness.

Will was the executive director of the ANU Climate Change Institute and notably was executive director of the International Geosphere-Biosphere Programme: A Study of Global Change (IGBP) from 1998 to 2004, and organized the landmark 15th Scientific Committee for the IGBP meeting in Cuernavaca, Mexico, at which Paul Crutzen broke into discussion of recent 'Holocene' Past Global Changes (PAGES, one of the core projects of the IGBP) , to improvise the apt word 'Anthropocene' as a novel concept in Earth history. Will's subsequent intervention was key to its wider dissemination, in encouraging Crutzen to publish 'the Anthropocene' (co-signed by the American limnologist Eugene Stoermer) in

Global Change, the IGBP Newsletter (May 2000) that he edited at the Stockholm IGBP Secretariat, and more widely in stimulating the exploration of the Anthropocene as a key framing concept for analysis of the Earth System and human impacts on it.

Will's critical role in the IGBP/Global Change/Earth System science community helped, too, together with environmental historian John McNeill, to steer early focus on Anthropocene analysis towards the significance of the mid-20th century, following WWII and 'modern economic growth' and 'development', as a time of fundamental change, with the 'Great Acceleration' concept that he did so much to develop ultimately becoming the guiding event for characterization of the Anthropocene. Will, along with colleagues, produced the now legendary Great Acceleration curves for numerous socio-economic indicators and Earth System responses first published in the IGBP synthesis book in 2004, and updated in 2015. What he initially termed the second stage of the Anthropocene, with the first stage following Paul Crutzen's original concept of a fossil-fueled Industrial Revolution inception, on review by the AWG became the focus of subsequent geological appraisal as the decisive transition into this potential new epoch.

Will, working alongside Johan Rockström and Tim Lenton amongst many others, initiated the debate on 'planetary boundaries', tipping points and the concept of the "safe operating space" for humanity and Earth's biosphere in an influential paper in 2009, which informed the Rio+20 summits' work on sustainable development. A more recent paper that he led, the 2018 'Trajectories of the Earth System in the Anthropocene' has been remarkably effective (it now has >2500 citations) in conveying the significance of ongoing planetary change to a very wide community, stretching far beyond the sciences. He had something approaching genius for seeing the fundamental core of a scientific question, and then expressing it simply and eloquently. Will was also a contributing author or reviewer of several IPCC reports and was commissioner on the Australian Climate Commission until it was disbanded in 2013 by then Prime Minister Tony Abbott. Will's determination, along with fellow members used crowdfunding to establish an independent Climate Council.

Will provided strong and insightful contributions to many of the AWG publications, leading on the powerfully integrative AWG article "Stratigraphic and Earth System approaches to defining the Anthropocene" in *Earth's Future* (August 2016). He presented at the influential first international meeting on the Anthropocene at the Geological Society of London in 2011, and for several of us it was our first experience of his vivid and compelling presentations. He also played an important part in formative AWG meetings in Oslo in 2016 and Mainz in 2018, displaying his characteristic consideration of all points of view, no matter the source. His passing represents a great loss, as regards the profoundly importance of his contributions to climate science, global change research, Earth System science, and Anthropocene science. He will be terrible missed as a person, too. For all of his scientific eminence, Will remained down-to-earth and displayed a consistent wit, warmth and welcoming spirit. He was encouraging to and supportive of others—not least of the nascent AWG in its early years—and in discussions displayed his characteristic consideration of all points of view, no matter the source. We mourn his passing and celebrate his extraordinary legacy.

Contributed by:

Colin Waters	Jaia Syvitski
Jan Zalasiewicz	Davor Vidas
John McNeill	Scott Wing
Martin Head	Jacques Grinevald.



Will relaxing in the evening after the AWG meeting at the Fridtjof Nansen Institute in Oslo, 2016. Photo: Davor Vidas.



Will presenting at the AWG meeting at the Max Planck Institute for Chemistry, Mainz in 2018. Photo: Astrid Kaltenbach.



At the same Mainz meeting Will presenting a slide referencing the significant role Paul Crutzen, who was attending the meeting, had on establishing the Anthropocene concept. Photo: Martin Head.

See also obituary in Nature 20th February 2023 <https://www.nature.com/articles/d41586-023-00519-x>

Anthropocene GSSP Project Update

There were three major milestones met in 2022 to progress the task of the AWG. The first occurred on 16-17th May at HKW, Berlin when a two-day AWG meeting (*Anthropocene Working Group. A Scientific Forum*) was held and the results from all twelve investigated sites were presented to an invited public audience. This was a prelude to *Unearthing the Present* (below) and the first time that all the results from the fieldwork and laboratory analyses were brought together and discussed. It was truly astonishing after the travails of the previous two years of COVID-19 disruption, to see everyone's hard work come together and to meet physically.

Below is the timetable of presentations on the explored GSSP sites given over the two-days for the record.

Anthropocene Working Group. A Scientific Forum May 18, 2022

Presentations and speakers

9:00 am – 1:00 pm

09:00 Welcome and Introduction by Bernd Scherer and Colin Waters

09:30 Flinders Reef, Australia (Jens Zinke)

11:00 Searsville Reservoir, USA (M. Allison Stegner, Elizabeth A. Hadly, Anthony D. Barnosky,)

12:00 San Francisco Estuary, USA (Mark Williams, Stephen Himson)

2:00 pm – 7:00 pm

2:00 Palmer, Antarctic Peninsula, Antarctica (Liz Thomas)

3:00 East Gotland Basin, Baltic Sea (Jérôme Kaiser, Juliana A. Ivar do Sul)

4:30 West Garden Flower Bank Reef, USA (Kristine L. DeLong)

5:30 Crawford Lake, Canada (Francine M. G. McCarthy)

6:30 Wrap Up (Simon Turner, Colin Waters)

Anthropocene Working Group. A Scientific Forum May 19, 2022

Presentations and speakers

9:10 am – 1:30 pm

09:10 Welcome by Colin Waters and Simon Turner

09:15 Sihailongwan Lake, China (Yongming Han)

10:15 Beppu Bay, Japan (Michinobu Kuwae)

11:30 Ernesto Cave, Italy (Andrea Borsato)

12:30 Karlsplatz, Wien Museum, Vienna, Austria (Michael Wagleich, Kira Lappé)

2:30 pm – 4:00 pm

2:30 Śnieżka Peatland, The Sudetes, Poland (Barbara Fiałkiewicz-Kozieł)

3:30 Wrap Up & Closing (Simon Turner & Colin Waters)

The AWG meeting was the prelude to *'Unearthing the Present'* where AWG members and scientists involved with the GSSP sites took part over three days following the AWG Scientific forum in a series of public seminars, discussions, and workshops to explore the multiple facets of the Anthropocene and the planet we have created.

During *Unearthing the Present* was the opening of the exhibition 'Earth Indices' which was the result of the close collaboration between the artists Giulia Bruno and Armin Linke who have closely followed the research of the AWG on compiling evidence for the new epoch.

Unearthing the Present

Below is the timetable and activities that AWG members (**in bold**) and GSSP team scientists (*in italics*) took part with a multitude of international scholars and artists. It was a unique experience to take part in - anyone who can recall sediment successions being deconstructed both stratigraphically and culturally in a live theatrical setting, I would like to hear from you.

Unearthing the Present, May 19, 2022

Programme

6:00 pm – 6:45 pm

Opening of Exhibition *Earth Indices. Processing the Anthropocene*

Bernd Scherer, Katrin Klingan, **Jan Zalasiewicz**

7:00 pm – 10:30 pm

Opening Program Unearthing the Present – Core Readings

Mark Williams, Francine M. G. McCarthy, Catherine Tammara, Soren Brothers, Michelle Murphy, *Liz Thomas*, Susan Schuppli, Daniel Emanuelsson, Jack Humby, Sophia Roosth, **Jens Zinke**, *Kristine L. DeLong*, *Neal Cantin*, Mi You, **Yongming Han**, *Dieter Tetzner*, Li Li

Unearthing the Present, May 20, 2022

Programme

9:30 am – 12:30 pm

Anthropocene Working Group. A Scientific Forum | Public Forum: Q&A on Revealing the Stratigraphic Anthropocene

Moderation by: **Simon Turner, Colin Waters** Introduction by: **Martin J. Head, Jan Zalasiewicz**

2:00 pm – 2:45 pm

Exchange on Geo-Inheritance | **Francine M. G. McCarthy**, Lesley Green

3:00 pm – 4:30 pm Markers

– What's So Micro About Plastics? | **Kat Austen, Juliana A. Ivar do Sul, Jérôme Kaiser**, Joana MacLean

3:00 pm – 4:30 pm Markers

– Environmental Markers to Chemical Violence | Lesley Green, Michelle Murphy, **Simon Turner**

3:00 pm – 4:30 pm Markers

– Mud, Materiality & Microfossils | *Stephen Himson, Allison Stegner*, **Mark Williams**, Matthew C. Wilson

5:00 pm – 5:45 pm

Exchange on Disappearance and Extinction | **Anthony D. Barnosky**, Cymene Howe

5:00 pm – 6:30 pm

Markers - Reading the Ashes | **Barbara Fiałkiewicz-Kozielec, Neil L. Rose**, Benjamin Steininger

5:00 pm – 6:30 pm

Markers – Conversations Beyond the Human | Kat Austen, Nigel Clark, *Kristine L. DeLong*, **Jens Zinke**

5:00 pm – 6:30 pm

Markers – Troubling Sedimentations | Maximilian Lau, **Francine M. G. McCarthy**, Sybille Neumeyer

7:00 pm – 9:00 pm

Markers –Fingerprints of the Nuclear Age |
Bernadette Bensaude-Vincent, **Andy Cundy**,
Irka Hajdas, Susan Schuppli, **Colin Waters**

7:00 pm – 9:00 pm

Markers – Archaeology of the Anthropocene |
Shadreck Chirikure, Katrin Hornek, Kira Lappé,
Oliver Sann, **Simon Turner**

Unearthing the Present, Saturday, May 21, 2022

Programme

12:00 pm – 2:00 pm

Clashing Presents: Between Big Melt and Small Policies | *Liz Thomas*, Ricarda Winkelmann,
Victor Galaz, Cymene Howe

2:00 pm – 2:45 pm

Exchange on Deep Time and Deep Response-ability | Jamie Allen, **Irka Hajdas**

3:00 pm – 5:00 pm

Clashing Presents: Memory and Oblivion in
Times of Extinction | **Mark Williams**,
Stephen Himson, Matthew C. Wilson, Sophia
Roosth, Orit Halpern

3:00 pm – 3:45 pm

Exchange on Collaboration and Complexity |
Victor Galaz, **Simon Turner**

5:00 pm – 9:00 pm

What if the Dam was removed? |

Anthony D. Barnosky, Lesley Green, *Elizabeth A. Hadly*, Michelle Murphy, Orit Halpern, Brian
Holmes, Olúfẹ́mi O. Táíwò, Karolina Sobocka, *Allison Stegner*, Stephanie Wakefield and Mi You.

6:00 pm – 8:00 pm

Clashing Presents: Reconciling Presents |

Andrea Borsato, Bernadette Bensaude-Vincent, Nigel Clark, Olúfẹ́mi O. Táíwò, Ann Cotten

Unearthing the Present, Sunday, May 22, 2022

Programme

2:00 pm – 2:45 pm

Exchange on Melting Narrations | Susan Schuppli, *Liz Thomas*

3:00 pm – 3:45 pm

Exchange on the Half-Life of the Nuclear Age | Brian Holmes, **Andy Cundy**

4:00 pm – 6:00 pm

How to Read A Changing Earth? Live Annotation of the Searsville Reservoir Core |
Elizabeth A. Hadly, *Allison Stegner*, **Anthony D. Barnosky**

This link <https://www.anthropocene-curriculum.org/project/evidence-experiment/unearthing-the-present> takes you to the Anthropocene Curriculum website where many of the recorded contributions have been curated by the team at HKW

Unearthing the Present: Earth Indices

portrays both the natural landscapes from which anthropogenic sediments are extracted, as well as the complexities of laboratory processes and the inscription devices they employ to transform the sediment into data that can be interpreted. A multi-layered archive was created that relates the anthropogenic traces in the Earth System to the emerging body of knowledge of a new geological epoch.



This link <https://www.anthropocene-curriculum.org/contribution/earth-indices> takes you to a navigable image map and PDF that constitute and in progress digital publication resulting from the artistic installation presented at HKW Berlin 19th May - to 17th October 2022. Photo here of Colin with some of the posters spread across Berlin in May (Photo: ST)

The **second milestone** reached, following directly on from the May meeting in Berlin, was an intense period of paper writing to produce the publications detailing the sites and introducing the process for a **special issue of The Anthropocene Review**. This was a big task by the multiple teams to turn around in such a short time and submit by September. All papers have been accepted after peer review and are now in production. Those online already with DOIs issued are linked below. All papers will be open access.

Waters, C. N., Turner, S. D., Zalasiewicz, J., & Head, M. J. (2023). Candidate sites and other reference sections for the Global boundary Stratotype Section and Point of the Anthropocene series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221136422>

Himson, S., Williams, M., Zalasiewicz, J., Waters, C., McGann, M., England, R., Jaffe, B. E., Boom, A., Holmes, R., Sampson, S., Pye, C., Berrio, J. C., Tyrrell, G., Wilkinson, I. P., Rose, N., Gaca, P., & Cundy, A. (2023). The San Francisco Estuary, USA as a reference section for an Anthropocene series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221147607>

Stegner, M. A., Hadly, E. A., Barnosky, A. D., La Selle, S., Sherrod, B., Anderson, R. S., Redondo, S. A., Viteri, M. C., Weaver, K. L., Cundy, A. B., Gaca, P., Rose, N. L., Yang, H., Roberts, S. L., Hajdas, I., Black, B. A., & Spanbauer, T. L. (2023). The Searsville Lake Site (California, USA) as a candidate Global Boundary Stratotype Section and Point for the Anthropocene Series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221144098>

Borsato, A., Fairchild, I. J., Frisia, S., Wynn, P. M., & Fohlmeister, J. (2023). The Ernesto Cave, northern Italy, as a candidate auxiliary reference section for the definition of the Anthropocene series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221144094>

Kuwae, M., Finney, B. P., Shi, Z., Sakaguchi, A., Tsugeki, N., Omori, T., Agusa, T., Suzuki, Y., Yokoyama, Y., Hinata, H., Hatada, Y., Inoue, J., Matsuoka, K., Shimada, M., Takahara, H., Takahashi, S., Ueno, D., Amano, A., Tsutsumi, J., ... Saito, Y. (2022). Beppu Bay, Japan, as a candidate Global Boundaries Stratotype Section and Point for an Anthropocene series.

The Anthropocene Review, 0(0). <https://doi.org/10.1177/20530196221135077>

Fiałkiewicz-Koziół, B., Łokas, E., Smieja-Król, B., Turner, S., De Vleeschouwer, F., Woszczyk, M., Marcisz, K., Gałka, M., Lamentowicz, M., Kołaczek, P., Hajdas, I., Karpińska-Kołaczek, M., Kołtonik, K., Mróz, T., Roberts, S., Rose, N., Krzykowski, T., Boom, A., & Yang, H. (2022). The Śnieżka peatland as a candidate for the Global Boundary Stratotype Section and Point for the Anthropocene series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221136425>

Kaiser, J., Abel, S., Arz, H. W., Cundy, A. B., Dellwig, O., Gaca, P., Gerdt, G., Hajdas, I., Labrenz, M., Milton, J. A., Moros, M., Primpke, S., Roberts, S. L., Rose, N. L., Turner, S. D., Voss, M., & Ivar do Sul, J. A. (2022). The East Gotland Basin (Baltic Sea) as a candidate Global Boundary Stratotype Section and Point for the Anthropocene series. *The Anthropocene Review*, 0(0). <https://doi.org/10.1177/20530196221132709>

Wagreich, M., Meszar, M., Lappé, K., Wolf, J., Mosser, M., Hornek, K., Koukal, V., Litschauer, C., Piperakis, N., & Hain, K. (2022). The urban sediments of Karlsplatz, Vienna (Austria) as a candidate Auxiliary Boundary Stratotype Section and Point for the Anthropocene series. *The Anthropocene Review*, 0(0).

<https://doi.org/10.1177/20530196221136427>

McCarthy, F., Patterson, R.T., Head, M.J., Riddick, N., Cumming, B.F., Hamilton, P., Pisaric, M., Cale, A.C., Gushulak, G., Leavitt, P., Lafond, K., Llew-Williams, B., Marshall, M., Heyde, A., Pilkington, P.M., Moraal, J., Boyce, J., Nasser, N., Walsh, C., Garvie, M., Roberts, S.L., Rose, N.L., Cundy, A.B., Gaca, P., Milton, J.A., Hajdas, I., Crann, C., Boom, A., Finkelstein, S. & McAndrews, J.H. (2023) The varved succession of Crawford Lake, Milton, Ontario, Canada as a candidate Global boundary Stratotype Section and Point for the Anthropocene series. *The Anthropocene Review*, 0(0). In press

Thomas, L., Vladimirova, D., Tetzner, D.T., Emanuelsson, D.B., Humby, J., Roberts, S.L., Turner, S.D., Rose, N.L., Gaca, P., & Cundy, A.B. (2023) The Palmer ice core as a candidate Global boundary Stratotype Section and Point for the Anthropocene series. *The Anthropocene Review*, 0(0). In press

DeLong, K.L., Palmer, K., Wagner, A.J., Weerabaddana, M.M., Slowey, N., Herrmann, A.D., Duprey, N.L., Martínez-García, A., Jung, J., Hajdas, I., Rose, N.L., Roberts, S.L., Roberts, L.R., Cundy, A.B., Gaca, P., Milton, A.J., Yang, H., Turner, S.D., Huang, C-Y., Shen, C-C., & Zinke, J. (2023). The Flower Garden Banks *Siderastrea siderea* Coral as a Candidate Global

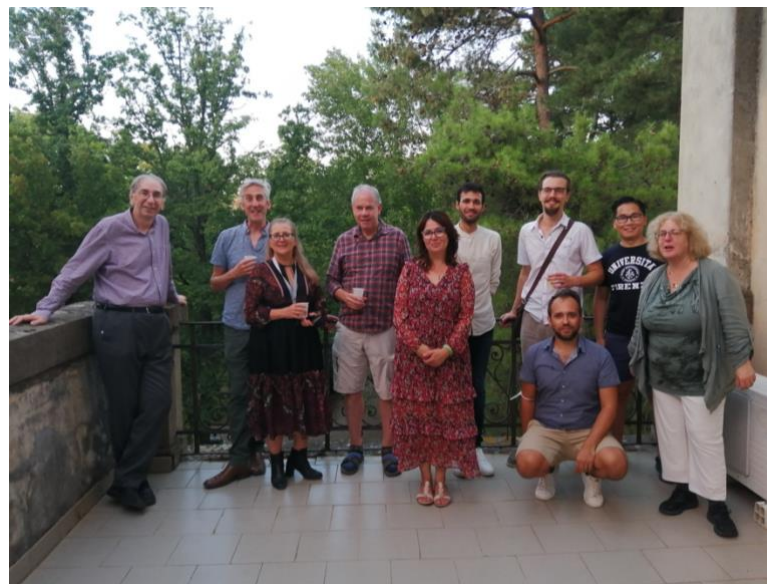
Boundary Stratotype Section and Point for the Anthropocene Series. *The Anthropocene Review*, 0(0). *In press*

Zinke, J., Cantin, N.E., DeLong, K.L., Palmer, K., Boom, A., Hajdas, I., Duprey, N.N., Martínez-García, A., Rose, N.L., Roberts, S.L., Yang, H., Roberts, L.R., Cundy, A.B., Gaca, P., Milton, A.J., Frank, G., Cox, A., Sampson, S., Tyrrell, G., Agg, M., & Turner, S.D. (2023) North Flinders Reef (Coral Sea, Australia) *Porites* sp. corals as a candidate Global Boundary Stratotype Section and Point for the Anthropocene Series. *The Anthropocene Review*, 0(0). *In press*

Han, Y., Zhisheng, A., Lei, D., Zhou, W., Zhang, L., Zhao, X., Yan, D., Arimoto, R., Rose, N.L., Roberts, S.L., Li, L., Tang, Y., Liu, X., Fu, X., Schneider, T., Hou, X., Lan, J., Tan, L., Liu, X., Hu, J., Cao, Y., Liu, W., Wu, F., Wang, T., Qiang, X., Chen, N., Cheng, P., Hao, Y., Wang, Q., Chu, G., Guo, M., Han, M., Tan, Z., Wei, C., & Dusek, U. (2023) The Sihailongwan Maar Lake, northeastern China as a candidate Global Boundary Stratotype Section and Point for the Anthropocene Series. *The Anthropocene Review*, 0(0). *In press*

The **third milestone** has been **the initiation of official discussion and voting** to select the location of the candidate Global boundary Stratotype Section & Point, the chronostratigraphic rank and date of the base of the proposed Anthropocene unit. As mentioned in the Chairman's pages, as we go to press, we are currently receiving votes to decide on a choice of three sites that were most popular in the first round. The result will be known February 20th, 2023. Current plans, though of course dependent on voting results and discussions, are to make a final public announcement at an event at MPIWG in Berlin at the end of April 2023.

AnthroFlor: SQS sponsored International Symposium on the Anthropocene, Florence 8-10 September 2022



Thanks again to Adele Bertini and her team of enthusiastic PhD students for organising.

AnthroFlor: SQS sponsored International Symposium on the Anthropocene, Florence 8-10 September 2022

SCIENTIFIC PROGRAMME

Aula Magna/Sala Strozzi, Florence, Italy (and online)

Day 1: 8th September 2022

- 9:45-9:55 **Opening Remarks** (Adele Bertini)
9:55-10:20 **Introduction and scope of meeting** (Colins Waters and Simon Turner)
10:20-11:00 **Introduction to the Anthropocene concept** (Colin Waters)
11:30-12:30 **Key markers in very high-resolution stratigraphy**
+ Radionuclides (Andy Cundy)
+ Combustion products (Neil Rose)
+ Paleontology of the Anthropocene (Mark Williams)
12:30-13:00 **Discussion**
12:30-13:00 **Visit to Natural History Museum – Geology and Paleontology collections** (University of Florence, guide Andrea Savorelli)
15:30-17:10 **Presentation of six GSSP candidate sites (15 mins)**
+ Beppu Bay (Mick Kuwae)
+ East Gotland Basin (Jérôme Kaiser & Juliana Ivar do Sul)
+ Crawford Lake (Francine McCarthy)
+ Śnieżka peatland (Barbara Fiałkiewicz-Kozieł)
+ Flinders Reef and West Flower Garden Bank Reef (Kristine DeLong)
17:40-17:55 **Modification of fluvio-deltaic systems in the Anthropocene** (Jaia Syvitski)
17:55-19:45 **Poster Presentations** (summaries led by Simon Turner)

Day 2: 9th September 2022

- 9:30 - 9:45 **Recap and scope for the day** (Jan Zalasiewicz, Martin Head)
9:45 - 10:00 **Evidence for, and implications of, the termination of the Holocene** (Colin Waters)
10:00-10:15 **Linking the Anthropocene with the Great Acceleration** (Martin Head)
10:15-10:45 **Discussion of previous talks**
11:15-11:40 **Evidence for early effects of Homo sapiens on terrestrial biodiversity** (Guido Chelazzi)
11:40-12:05 **The geological footprint of Pisa and Firenze: the flood hazard perspective** (Marco Benvenuti)
13:35-14:00 **Early transformations** (Erle Ellis)
14:00-15:00 **Anthropocene as an 'Event'** (Erle Ellis and Colin Waters)
15:00-15:15 **Arguments against formalization** (Lucy Edwards)
15:15-15:30 **Arguments in favour of formalization** (Jan Zalasiewicz)
16:00-17:00 **Open Session, responses to the two days' discussions**
17:00-17:30 **Closing Remarks** (Colin Waters and Simon Turner)

MULTI-AUTHOR AWG PUBLICATIONS (2022)

Edwards, L.E., Bauer, A., Edgeworth, M., Ellis, E., Finney, S., Gibbard, P., Gill, J.L., Maslin, M., Merritts, D., Ruddiman, W. and Walker, M., 2022. The Anthropocene serves science better as an event, rather than an epoch. *Journal of Quaternary Science*, 37: 1188.

<https://doi.org/10.1002/jqs.3475>

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Head, M.J., Zalasiewicz, J.A., Waters, C.N., Turner, S.D., Williams, M., Barnosky, A.D., Steffen, W., Wagemann, M., Haff, P.K., Syvitski, J., Leinfelder, R., McCarthy, F.M.G., Rose, N.L., Wing, S.L., An, Z., Cearreta, A., Cundy, A., B., Fairchild, I.J., Han, Y., Ivar do Sul, J.A., Jeandel, C., McNeill, J.R. and Summerhayes, C.P. (2022). The proposed Anthropocene Epoch/Series is underpinned by an extensive array of mid-20th century stratigraphic event signals. *Journal of Quaternary Science*, 37(7), 1181-1187. <https://doi.org/10.1002/jqs.3467>

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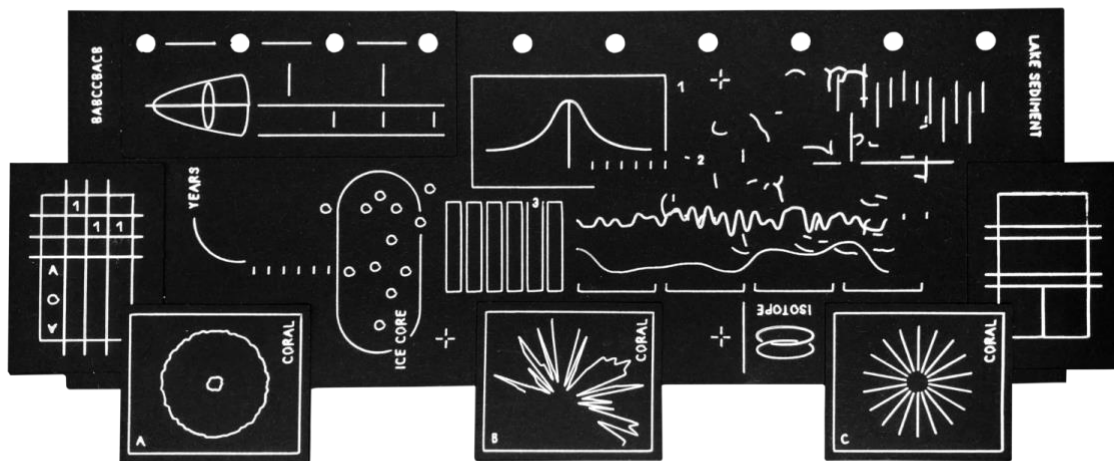
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AWG/MPIWG/HKW: Anthropogenic Markers Online Publication

Following the September 2021 meeting at HKW an online publication of essays has been produced. [ANTHROPOGENIC MARKERS: STRATIGRAPHY AND CONTEXT](#) (2022). This is a publication by the [Max Planck Institute for the History of Science \(MPIWG\)](#) and a contribution to the year-long program [Evidence & Experiment](#) in which [Haus der Kulturen der Welt](#) and the MPIWG mark their long-term collaboration with the Anthropocene Working Group.



Artwork produced for Anthropogenic Markers digital publication by Protey Temen (<https://www.instagram.com/proteytemen/>) Used here with permission from artist.

The digital publication [Anthropogenic Markers: Stratigraphy and Context](#) (Edited by Christoph Rosol and Giulia Rispoli) explores and contours some of the historical contexts, epistemic settings, and conceptual interventions around the ongoing work of Anthropocene geology. In seven thematic dossiers, contributions from the fields of geochemistry and paleobiology, history and science studies, artistic research, archaeology, literary studies, and anthropology reflect on selected material markers of human impacts on earthly strata. Taken together, they form a unique interdisciplinary conversation across positions and perspectives, helping to map out and expand upon the many ways of tracing the evidence that defines the onset of a human-dominated and crisis-laden epoch.

Below are a selection of essays by AWG and other authors and I would encourage all to explore the multi-media online publication as well <https://www.anthropocene-curriculum.org/anthropogenic-markers>.

ANTHROBIOGEOCHEMICAL CYCLES: [The Anthropocene signal amidst the noise](#) (Alejandro Cearreta, Ian Fairchild, Agnieszka Gałuszka, Colin Summerhayes and Michael Wagreich) <http://bit.ly/3X4vCox>

BIOTIC CHANGE: [Biological and paleontological signatures of the Anthropocene](#) (Anthony D. Barnosky, Alejandro Cearreta, Kristine L. DeLong, Martin J. Head, Reinhold Leinfelder, Francine M.G. McCarthy, Mark Williams and Jens Zinke) <http://bit.ly/40rgeia>

COMBUSTION: [Combustion products as markers for the Anthropocene](#) (Yongming Han, J.R. McNeill, Neil L. Rose and Simon Turner) <http://bit.ly/3HvNgfb>

CRITICAL ENVIRONMENTS: [Anthropogenic threats to ecosystems in the Anthropocene](#) (Andy Cundy, Agnieszka Gałuszka, Yongming Han, Neil L. Rose, William Shotyk, Simon Turner and Michael Wagreich) <http://bit.ly/3l43Xad>

NOVEL MATERIALS AND TECHNOFOSSILS: [The technofossil record: Where archaeology and paleontology meet](#) (Matt Edgeworth, Peter K. Haff, Juliana A. Ivar do Sul, Daniel Richter and Jan Zalasiewicz) <http://bit.ly/3jtn4Kc>

NUCLEAR ANTHROPOCENE: [Radioactive fallout as a marker for the Anthropocene](#) (Andy Cundy, Irka Hajdas, Yoshiki Saito and Colin Waters) <http://bit.ly/3DBmeSw>

Anthropocene-related papers/books published by AWG members or in press (alphabetically by AWG author):

Alejandro Cearreta

Cearreta, A.; Gómez-Arozamena, J.E.; Irabien, M.J.; Ruiz-Fernández, A.C.; Sánchez-Cabeza, J.A.; Ortiz, J.; Sáez-Muñoz, M., 2022. Datación de sedimentos recientes utilizando radionucleidos de vida corta. *Cuaternario y Geomorfología*, 36: 87-104, <https://doi.org/10.17735/cyg.v36i3-4.93504>

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Gardoki, J.; **Cearreta**, A.; Irabien, M.J.; Gómez-Arozamena, J.; Villasante-Marcos, V.; García-Artola, A., 2022. Cambios en las asociaciones recientes de foraminíferos bentónicos en el estuario del Nalón (Asturias). *Geogaceta*, 71: 55-58, https://sge.usal.es/archivos/geogacetas/geo71/Geo71_p_55_58.pdf

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Erle Ellis

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Reinhold Leinfelder

Leinfelder, R. (2022): Inwiefern prägen wir Menschen mit unserem Handeln erstmals ein Erdzeitalter? (Interview mit R. Leinfelder).- In: Diercke Geographie, Oberstufe, Ausgabe 2022 Schleswig-Holstein, Schülerband, S. 22-23. Diercke-Geographie-Reihe, Westermann-Verlag, ISBN 978-3-14-100910-1.

Leinfelder, R. (2022): Die Unswelt und die möglichen Zukünfte (Geleitwort).- In: Melanie Laibl & Corinna Jegelka, Reinhold Leinfelder, WErde wieder wunderbar. 9 Wünsche fürs Anthropozän. Ein Mutmachbuch, 64 S., Edition Nilpferd, G&G-Kinderbuchverlag (Wien). ISBN: 978-3-7074-5272-3 Info: <https://www.ph-noe.ac.at/de/forschung/forschung-und-entwicklung/anthropozaen/mutmachbuch>

Leinfelder, R. (2022): "Auch Maschinen haben Hunger" - Biosphäre als Modell für die Technosphäre im Anthropozän In: Carmen Sippl & Erwin Rauscher. (Hrsg.) Kulturelle Nachhaltigkeit lernen und lehren. Reihe: Pädagogik für Niederösterreich, Bd. 11, S.S 489-521 Innsbruck, Wien (StudienVerlag), ISBN 978-3-7065-6180-8, <https://www.studienverlag.at/produkt/6180/kulturelle-nachhaltigkeit-lernen-und-lehren/>

Phil Gibbard and Colin Waters

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Yongming Han and Colin Waters

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Yoshi Saito

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Saito, Y. 2022. Defining the Geological Timescale (GSSP) and the Anthropocene. *Trends in the Sciences*, 27(11), 78-81, (in Japanese)

Jaia Syvitski and Yoshi Saito

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Davor Vidas

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Michael Wagreich

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Colin Waters (and Simon Turner, Juliana Ivar do Sul and Jan Zalasiewicz)

Long, Z., Pan, Z., Jin, X., Zou, Q., He, J., Li, W., **Waters, C.N., Turner, S.D., do Sul, J.A.I., Yu, X., Chen, J., Lin, H., and Ren J.** 2022. Anthropocene microplastic stratigraphy of Xiamen Bay, China: A history of plastic production and waste management. *Water Research*, 226: 119215

Waters, C.N. and Turner, S.D. 2022. Defining the onset of the Anthropocene. *Science* 378 (6621): 706-708. <https://doi.org/10.1126/science.ade2310>.

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Mark Williams

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Williams, M., Zalasiewicz, J. 2022. *The Cosmic Oasis*. Oxford University Press.

Jan Zalasiewicz

Zalasiewicz, J. 2022. Science: Old and New Patterns of the Anthropocene. Chapter 1 in (Thomas, J.A., Ed.) *Altered Earth: Getting the Anthropocene Right*. Cambridge University Press, 277 pp.

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REPORTS BY OTHER INTERNATIONAL BODIES

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UNDP 2022. Human Development Report 2021/2022. Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World. <https://www.undp.org/mauritius-seychelles/publications/human-development-report-2021-2022-uncertain-times-unsettled-lives-shaping-our-future-transforming-world>

WWF 2022. Living Planet Report 2022. Building a nature-positive society. <https://www.wwf.org.uk/our-reports/living-planet-report-2022>

CONFERENCES/LECTURES

Presentations by AWG members over 2022, (alphabetically by AWG author):

Alejandro Cearreta

Date	Conference/Meeting Title	Organisation/Venue
23-27 May 2022	Gardoqui, J.; Cearreta, A.; García-Artola, A.; Irabien, M.J.; Gómez-Arozamena, J.; Villasante-Marcos, V., Assessing recent anthropogenic disturbances and environmental recovery in the Nalón estuary (Asturias, N Spain)	European Geosciences Union General Assembly 2022, Vienna (A) https://doi.org/10.5194/egusphere-equ22-413
28 June- 01 July 2022	Álvarez-Lloret, P.; Quijada, E.; Cearreta, A., Formación de carbonatos en medios costeros asociados a la alteración de residuos siderúrgicos (Playa de Portazuelos, Asturias)	XXXIX Reunión Científica de la Sociedad Española de Mineralogía, Baeza (E), https://semsea2022.es/
07-09 July 2022	García-Artola, A.; Pascual, A.; Cearreta, A., Foraminíferos bentónicos como indicadores del nivel del mar en el estuario del Oka (N España)	X Simposio sobre el Margen Ibérico Atlántico/X Simpósio sobre a Margem Ibérica Atlântica, Bilbao (E), https://bit.ly/3kVuPcp
07-09 July 2022	Villasante-Marcos, V.; Gardoki, J.; Gómez-Arozamena, J.E.; Irabien, M.J.; Cearreta, A.; García-Artola, A.; Quijada, I.E., Magnetismo ambiental como trazador de impactos antropogénicos en la Ría de Avilés y la Playa de Portazuelos (Asturias, norte de España)	X Simposio sobre el Margen Ibérico Atlántico/X Simpósio sobre a Margem Ibérica Atlântica, Bilbao (E), https://bit.ly/3kVuPcp
07-09 July 2022	Gardoki, J.; Cearreta, A.; García-Artola, A.; Irabien, M.J.; Gómez-Arozamena, J.E. & Villasante-Marcos, V., Señales antropogénicas en el registro sedimentario reciente del interior de la Ría de Ferrol (Galicia, NO España)	X Simposio sobre el Margen Ibérico Atlántico/X Simpósio sobre a Margem Ibérica Atlântica, Bilbao (E), https://bit.ly/3kVuPcp
07-09 July 2022	Galaz-Samaniego, C.A.; Peñalba, M.C.; Cearreta, A., Generación de nuevas variables polínicas antrópicas como herramienta para cuantificar la perturbación de los ecosistemas litorales en el Antropoceno	X Simposio sobre el Margen Ibérico Atlántico/X Simpósio sobre a Margem Ibérica Atlântica, Bilbao (E), https://bit.ly/3kVuPcp
11-15 July 2022	García-Artola, A.; Li, T.; Cearreta, A.; Horton, B.P., Late Holocene RSL evolution in Northern Spain	WCRP Sea Level Conference 2022, Singapore https://sealevelconference.org/
05-08 Sept 2022	Gardoqui, J.; Cearreta, A.; García-Artola, A.; Irabien, M.J.; Gómez-Arozamena, J.; Villasante-Marcos, V., Characterization of recent environmental disturbances in the inner Ría of Ferrol (Galicia, NW Spain)	ECSA 59-Using the best scientific knowledge for the sustainable management of estuaries and coastal seas, Donostia-San Sebastián (E) https://www.estuarinecoastalconference.com/

Date	Conference/Meeting Title	Organisation/Venue
12-16 Sept 2022	Gardoqui, J.; Cearreta, A.; García-Artola, A.; Irabien, M.J.; Gómez-Arozamena, J. & Villasante-Marcos, V., Recent sedimentation-erosion processes along the Nalón estuary (Asturias, N Spain)	10th International Conference on Geomorphology, Coimbra (P) https://doi.org/10.5194/icg2022-689

Erle Ellis

Date	Conference/Meeting Title	Organisation/Venue
9 Sept 2022,	Earth's Early Transformation by Humans: Bringing Social & Natural Sciences Together.	AnthroFlor: Anthropocene Working Group and Subcommittee on Quaternary Stratigraphy of the International Commission on Stratigraphy Joint Meeting. Florence, Italy (remote).
14 Dec 2022.	Advances in Mapping Pre-industrial Land Use Confirm Earth's Early Transformation. In Session GC35B - Connecting Cause and Effect in Analyses of Coupled Human and Geophysical Systems: The Early to Modern Anthropocene.	American Geophysical Union Fall 2022 Meeting, Chicago, Illinois, USA (remote).

Reinhold Leinfelder

Date	Conference/Meeting Title	Organisation/Venue
7 Mar 2022	Der Anthropozän-Imperativ - Transformation zu einer zirkulären Wertschöpfung. 15, <i>Berliner Recycling und Sekundärrohstoffkonferenz 7./8. März 2022</i>	Coop, Tech Univ .Claustal, RWTH Aachen, TK-Verlag etc. https://www.vivis.de/2022/03/online-event-recycling-und-sekundaerrohstoffkonferenz-2022/13326/
28 Apr 2022	„WERDE wieder wunderbar. 9 Wünsche fürs Anthropozän". <i>Werkstattgespräch zur Buchpräsentation an der Pädagogischen Hochschule Niederösterreich, Campus Baden;</i>	Pädagogischen Hochschule Niederösterreich PR: https://www.presstext.com/news/buchpraesentation-erde-wieder-wunderbar-.html
7 May 2022	Idealtypische Zukünfte von Lebenswelten. Polyperspektivisches Denken als Basis für Zukunftsgestaltung. <i>Reflexionswerkstatt Futures Literacy, Pädagogische Hochschule Niederösterreich <u>Info und Anmeldung (online-Veranstaltung)</u></i>	Pädagogische Hochschule Niederösterreich
12 May 2022	Idealtypische Zukünfte von Lebenswelten. <i>Staatliches Museum für Naturkunde, Stuttgart, Online-Konferenz "Anthropozän" - Menschgemacht</i>	Staatliches Museum für Naturkunde Stuttgart

Date	Conference/Meeting Title	Organisation/Venue
12 May 2022	<i>Von der Umwelt zur Unswelt.</i> Staatliches Museum für Naturkunde, Stuttgart, Vortragsreihe zu <u>Große Landesausstellung "Anthropozän" - Zeitalter? Zeitenwende? Zukunft?"</u> online	Staatliches Museum für Naturkunde Stuttgart
14 June 2022	Science Communication in and on the Anthropocene. <i>Online lecture series "Aspects of the Anthropocene". University of Vienna.</i>	University of Vienna, Info: https://www.forum-anthropozaen.com/de/kooperationen/van-2022
17 Jun 2022	Gute Neuigkeiten im Anthropozän. <i>Kinderbuch-präsentation "WErde wieder wunderbar & Werkstattgespräch</i>	5.Forum Anthropozän, Mallnitz Besucherzentrum, Nationalpark Hohe Tauern. , (->Event report)
8 Jul. 2022	Deep-Time Lessons for the Future of Reefs - Can atavistic reef features help in reconsidering natural solutions and management concepts? Input lecture by Reinhold Leinfelder for Workshop WS13 - Which characteristics define coral reefs in the Anthropocene?) online	Organised by J.Zinke, N. Duprey, R. Leinfelder, G. Heiss), 15th International Coral Reef Symposium 03-08 July 2022, Bremen.
23 Sep 2022	Das Anthropozän-Konzept - Von der Erdsystem-Analyse zur Zukunftsverantwortung. Das Anthropozän - Umweltwandel im menschengemachten Zeitalter. Online-Konferenz für Schülerinnen und Schüler; DVGeo und VBIO. https://www.vbio.de/aktuelles/details/das-anthropozaen-umweltwandel-im-menschengemachten-zeitalter	DVGeo and VBIO (Dachverband der Geowissenschaften & Verband Biologie, Biowissenschaften, Biomedizin in Deutschland)

John McNeill

Date	Conference/Meeting Title	Organisation/Venue
29 Apr 2022	"Anthropocene Debates"	Guelph University (Canada) (via Zoom)
23 Jun 2022	"Anthropocene Data and Debates"	Ibn Haldun University, Istanbul
8 Sept 2022	"Building the Anthropocene: Global Environmental History of Industrialization"	University of Vienna. Coonference on Environmental Histories of the Ottoman and Post-Ottoman World
8 Oct 2022	"The Anthropocene," (8 October)	Ford Calumet Environment Center, Big Marsh City Park, Chicago
14 Nov 2022	"Urbanization and the Anthropocene since 1950"	Bethesda-Chevy Chase High School, Maryland, USA

Neil Rose

Date	Conference/Meeting Title	Organisation/Venue
15 Oct 2022	<i>What does the Anthropocene look like? Evidence for its formalization as an epoch.</i> A burning issue: Fossil fuel combustion products as markers for the Anthropocene	Yorkshire Geological Society/Yorkshire Philosophical Society meeting, Yorkshire Museum, York [in person]

Will Steffen

Date	Conference/Meeting Title	Organisation/Venue
17 Feb 2022	'Planetary Boundaries: Managing the Global Commons' Presentation can be found here https://www.youtube.com/watch?v=olPhtBldc_Y&t=783s	World Sustainable Development Summit in New Delhi, India - https://wsds.teriin.org/2022/assets/pdf/WSDS-Bulletin-2021-22-Day2.pdf

Simon Turner

Date	Conference/Meeting Title	Organisation/Venue
27 June 2022	Anthropocene Archive Workshop, UCL Institute of Archaeology Where in the UK are sites with a physical record of the Anthropocene? A one-day workshop of presentations and discussions inviting suggestions of potential Anthropocene sites in the UK. A UCL Anthropocene/Deans Strategic Fund initiative designed by Manuel Arroyo-Kalin and Simon Turner Speakers (and sites) including: Matt Edgeworth (River Thames landfills); Colin Waters (Crymlyn Bog, Wales); Catherine Russell (Shrewsbury); Viv Jones (Round Loch of Glenhead, Scotland); Neil Rose (Lochnagar, Scotland); Richard Macphail (London Guildhall); Tony Brown (Berth Pool) and Hannah Sellers/Mark Williams (Narborough Bog, Leicester) Any other suggestions in the UK? Please contact simon.turner@ucl.ac.uk	
7 July 2022	The Anthropocene: A Challenge to Environmental History (Plenary with Julia Adeney Thomas and Mark Williams)	European Society for Environmental History. Bristol University, July 2022. http://bit.ly/3WT6nWq
2 Aug 2022	Defining the Stratigraphic Anthropocene (AOGS Session SE-16)	Asia Oceania Geosciences Society, 19 th Annual Meeting, Singapore (Virtual)
14-16 Oct 2022	Where is the Planetary? - <i>How do we tell planetary stories?</i> With L.Sasha Gora, Shadreck Chirikure, Patricia Reed, Fernando Silva e Silva & Mi You, Simon Turner - <i>What planetary damage can be repaired?</i> Mohammad al Attar, Orit Halpern, Simon Turner, Valentina Karga, Margarida Mendes & Nishant Shah	Haus der Kulturen der Welt, Berlin Where is the Planetary? A discourse and performance program, scholars, artists, and activists' experiment with practices for a collective coordination of planetary-scale issues in close collaboration with the artist Koki Tanaka. https://www.anthropocene-curriculum.org/project/evidence-experiment/where-is-the-planetary

Date	Conference/Meeting Title	Organisation/Venue
14 Nov 2022	Turner, S., Rose, N.L., Unger, L. & Curtis, C. Anthropocene Stratigraphy in Southern Africa. "Nairobi's Anthropocene"	IGCP732, University of Kenya, 14-16 Nov 22. Nairobi and online.

Davor Vidas

Date	Conference/Meeting Title	Organisation/Venue
7 June 2022	The International Law Association (ILA) and sea-level rise: reports and resolutions, 2012–2022', Invited Talk at the International Seminar on <i>Rising Sea Levels and AALCO Member States: Perils and Protection under International Law</i> ,	Asian-African Legal Consultative Organization (AALCO), New Delhi, India
20 June 2022	Interim Report of the Committee on International Law and Sea Level Rise', at the 80 th Biennial Conference of the International Law Association (ILA)	ILA, Lisbon, Portugal
22 June 2022	'Two Interpretations', conference speech at a panel on <i>Current Challenges for International Law: Sea Level Rise</i> .	Centre for International Law (CIL) of the National University of Singapore and the FNI, Lisbon, Portugal
21-23 Sept 2022	'Sea Level Rise and the Law of the Sea: Between the Holocene and the Anthropocene', Invited Speech at the <i>International Symposium on Ocean Governance, Environmental Rights and Sustainable Development in the Anthropocene</i> .	Nankai University Law School, Tianjin, China
18 Nov 2022	'Levels of Responses to Sea Level Rise: An Introduction', Invited speech at the International Conference on <i>Preparing for Sea Level Rise</i> .	University of Lisbon – Faculty of Law and the FNI, Lisbon, Portugal
30 Nov 2022	'Law of the Sea and sea-level rise', Invited Speech at the International Conference on <i>The UN Convention on the Law of the Sea @40: The next 40 years</i> .	Hellenic Branch of the International Law Association, held under the auspices of H.E. The President of the Hellenic Republic, at the National & Kapodistrian University of Athens, Greece

Michael Wagreich

Date	Conference/Meeting Title	Organisation/Venue
8 March 2022	Wagreich, M., Horn, E., Seidler, S., An Introduction to the Anthropocene	Lecture Series for students and the Forum Anthropocene, summer semester 2022, University of Vienna, Austria
8 March - 28 June, 2022	Aspects of the Anthropocene.	Lecture Series for students and the Forum Anthropocene, summer semester 2022, University of Vienna, Austria

Date	Conference/Meeting Title	Organisation/Venue
15 March 2022	Edwards, L., Wagnreich, M., Draganits, E., Discussion panel - The Anthropocene, a geological epoch or event?	Lecture Series for students and the Forum Anthropocene, summer semester 2022, University of Vienna, Austria
1-2 April 2022	Wagnreich, M., Geologie und das fossile "Betonzeitalter" (invited)	Greenwashed Concrete Conference, Vienna
30 May 2022	Wagnreich, M. & Pöpl, R., Anthropocene part of MOCC	Massive Open Online Course, University of Vienna
1-5 Aug 2022	Wagnreich, M., Koukal, V., and the IGCP 732 PI-Team, UNESCO International Geoscience Program IGCP 732 LANGUAGE Of The Anthropocene - An Introduction (invited)	AOGS2022, 19th Annual Meeting, Asia Oceania Geosciences Society, Virtual
21-27 Aug 2022	Weissl, M. Lappé, K., Hatzenbühler, D., Wagnreich, M., A Tale of Two Cities. From Romans to the Anthropocene, from Carnuntum to Vienna.	25th LIMES Congress, Nijmegen (NL)
10-14 Sept 2022	Hornek, K., Lappé, K., Wagnreich, M., Art and geology – anthropogenic strata and latent soils of Vienna.	PANGEO AUSTRIA 2022, Leoben, Austria
10-14 Sept 2022	Koukal, V. & Wagnreich, M., An Introduction to the UNESCO International Geosciences Program IGCP 732. LANGUAGE of the Anthropocene	PANGEO AUSTRIA 2022, Leoben, Austria
10-14 Sept 2022	Wagnreich, M., Stratigraphy of the Anthropocene	PANGEO AUSTRIA 2022, Leoben, Austria
30 Sept 2022	Wagnreich, M., The Anthropocene – a new unit of the Geological Timescale	Lecture in VISESS Summer School: Global Change and Sustainability in Physical Geography, University of Vienna, Austria

Colin Waters

Date	Conference/Meeting Title	Organisation/Venue
27 Jun 2022	Anthropocene Archive Project Proposed site: Crymlyn Bog, Swansea	UCL Institute of Archaeology 27 Jun 22 [online]
15 Oct 2022	Waters, C.N. Understanding of the geological Anthropocene and the current process of its formal definition	Yorkshire Geological Society/Yorkshire Philosophical Society meeting, Yorkshire Museum, York [in person]
3 Nov 2022	Waters, C.N. Understanding the geological Anthropocene and the current process of its formal definition	Khalifa University, Abu Dhabi [online]
14 Nov 2022	Waters C.N. and project leaders of the 12 candidate sites. Progress in the investigation for a potential Global Boundary Stratotype Section and Point (GSSP) for the Anthropocene Series.	IGCP732 "Nairobi's Anthropocene 2022 14-16 Nov 22 [online]

Mark Williams

Date	Conference/Meeting Title	Organisation/Venue
April 2022	Nightingale, C., Lincoln, T., Williams, M., Grinsell, S. Conversation 4: cities and the Anthropocene	Global Urban History Project http://bit.ly/3HiHldz
May 2022	Williams, M, Himson, S. The past, present and future of extinction.	Clashing Presents: Memory and Oblivion in Times of Extinction. Haus der Kulturen der Welt. https://www.hkw.de/en/programm/beitragende_hkw/persons/personenseite_206324.php
May 2022	Himson, S., Stegner, A., Williams, M., Wilson, M.C. Mud, materiality, and microfossils	Markers - material delineations of the present. Haus der Kulturen der Welt. https://www.anthropocene-curriculum.org/item/mud-materiality-microfossils-seminar-images/
May 2022	Williams, M. The cosmic oasis	Pint of Science festival https://pintofscience.co.uk/event/life-as-we-dont-know-it
July 2022	Williams, M. Mutualistic cities	European Society for Environmental History. Bristol University, July 2022. http://bit.ly/3WT6nWg
July 2022	The Anthropocene: a new epoch of geological time characterised by humans. The Hertfordshire Geological Society.	https://www.hertsgeolsoc.org.uk/event/the-anthropocene-a-new-epoch-of-geological-time-characterised-by-humans/
Sept 2022	Williams, M., Himson, S. The palaeontology of the Anthropocene.	Anthroflor. SQS-sponsored International Symposium on the Anthropocene.
Oct. 2022	Al Attar, M., Mendes, M., Snedeker, R., Solomon, N., Williams, M. Planetary Compositions Part 4. Artistic documentation of Where is the Planetary?	Haus der Kulturen der Welt https://www.hkw.de/en/programm/beitragende_hkw/persons/personenseite_206324.php
Nov 2022	Williams, M. Are we living in the Anthropocene.	Dublin Institute for Advanced Studies. https://www.youtube.com/watch?v=CZhEhBMVJn4
Nov-Dec 2022	Williams, M. The Anthropocene: a planetary-scale change to the biosphere and the future wellbeing of planet Earth.	The Palaeontological Association. Given as a series of lectures as part of the Palaeontological Association Exceptional Lecturer for 2022, at Plymouth and Ghent universities, at Lafayette College, Pennsylvania, and to the AGM of the Palaeontological Association.

Jan Zalasiewicz

Date	Conference/Meeting Title	Organisation/Venue
17 Feb 2022	Zalasiewicz, J.A. & Williams, M. 'The Anthropocene and its biosphere'	World Sustainable Development Summit in New Delhi, India - https://wsds.teriin.org/2022/assets/pdf/WSDS-Bulletin-2021-22-Day2.pdf
22 Mar 2022	Zalasiewicz, J.A., McCarthy, F.M.G. (co-presenters), Colin Waters, Simon Turner, Martin Head and Members of the AWG Invited presentation: <i>The Anthropocene as a potential unit of the Geological Time Scale: an update on progress.</i>	International Geological Congress-Virtual, March 22, 2022.

MEDIA (websites, internet news, radio)

Contributions to media articles and news stories by AWG members

Contributed	Date	Details of media
Cearreta	17 April 2022	"Las marismas abonan nuevos negocios basados en la economía azul", Spanish journal ABC, suplemento Empresa, 10-11, [Interview], https://www.abc.es/economia/abci-marismas-abonan-nuevos-negocios-basados-economia-azul-202204170027_noticia.html?ref=https%3A%2F%2Fwww.google.com%2F
Cearreta	17 November 2022	"En busca del lugar del planeta con más cicatrices provocadas por los humanos"/"Searching for the site that best represents the impact of humans on the planet", Spanish Journal El País, suplemento Ciencia/Materia, [Interview], https://elpais.com/ciencia/2022-11-17/en-busca-del-lugar-del-planeta-con-mas-cicatrices-provocadas-por-los-humanos.html?mid=DM153565&bid=1362280257 ; https://english.elpais.com/science-tech/2022-11-19/searching-for-the-site-that-best-represents-the-impact-of-humans-on-the-planet.html
Fiałkiewicz-Kozieł	26.04.2022	Interview with Paul Voosen, Science https://www.science.org/content/article/bogs-lakebeds-and-sea-floors-compete-become-anthropocene-s-golden-spike
Fiałkiewicz-Kozieł	05.2022	Interview with Orion magazine https://storymaps.arcgis.com/stories/4e3a34e2b3704b43bd90718e53b1b080
Fiałkiewicz-Kozieł	01-07-2022	Internet news Dzieje.pl "Równia pod Śnieżką może zostać oficjalną „granicą między epokami" https://dzieje.pl/rozmaitosci-historyczne/rownia-pod-sniezka-moze-zostac-oficjalna-granica-miedzy-epokami
Fiałkiewicz-Kozieł	04-07-2022	Internet news Spider'sWeb "Początek ery destrukcji pod Śnieżką. Tam zaczęła się niszczycielska działalność człowieka" https://spidersweb.pl/2022/07/antropocen-nowa-epoka.html
Fiałkiewicz-Kozieł	05.07.2022	Internet news TVP3 "Równia pod Śnieżką może zostać oficjalną „granicą między epokami" https://wroclaw.tvp.pl/61126430/rownia-pod-sniezka-moze-zostac-oficjalna-granica-miedzy-epokami
Fiałkiewicz-Kozieł	10.07.2022	Interview with PULSAR https://www.projektpulsar.pl/srodowisko/2172979,1,polskie-torfowisko-podpowiada-kiedy-zaczal-sie-antropocen.read
Fiałkiewicz-Kozieł	12.07.2022	Interview with Radio RDC - Z innej planety: o poszukiwaniu "złotego gwoźdź", czyli granicy między epokami geologicznymi https://www.rdc.pl/podcast/z-innej%20planety_fY7TF0S0caRGGuoABNJe?episode=LjIFwLL8oQf2QcMSVf3q&active_page=5
Fiałkiewicz-Kozieł	13.07.2022	Interview with Radio „3" "Złoty gwoźdź". Czy Równia pod Śnieżką będzie "granicą między epokami"? https://trojka.polskieradio.pl/artukul/2999891,Zloty-gwozdz-Czy-Rownia-pod-Sniezka-bedzie-granica-miedzy-epokami
Fiałkiewicz-Kozieł	13.07.2022	Karkonoski Park Narodowy, Poland. "Śnieżka w Science!" https://www.facebook.com/KarkonoskiParkNarodowy/photos/a.118712624889187/5134978209929245/
Fiałkiewicz-Kozieł	9.08.2022	Interview with Vincent Nouyrigat, Epsilon

Contributed	Date	Details of media
Fiałkiewicz-Kozieł	13.08.2022	Interview with Marcel aan de Brugh https://www.nrc.nl/nieuws/2022/09/30/de-mens-schept-een-geologisch-tijdperk-a4143478
Leinfelder	2022, various	Some Reviews of our children book on the Anthropocene: 18 Aug 2022, Land und Forst: Mutmachbuch, https://www.digitalmagazin.de/marken/landforst/hauptheft/2022-33/leben-auf-dem-land/063_mutmachbuch N10 Aug 2022: ÖN Eichelhäher rettet die Welt: https://www.noen.at/in-ausland/eichelhaeher-rettet-die-welt-kinderbuch-von-michael-stavari-klimaerwaermung-klimawandel-kritik-umweltpolitik-oesterreich-332012762 28 June 2022, Anthropozän-Blog der Pädagogischen Hochschule Niederösterreich: "WERde wieder wunderbar" beim 5. Forum Anthropozän (von Carmen Sippl). anthropozaen.hypothesen.org/1645 17 May 2022, BuchMarkt - Das Ideenmagazin für den Buchhandel: "Drei für unsere Erde" - Empfehlungen für den Juni 2022. Die Deutsche Akademie für Kinder- und Jugendliteratur hat für den Monat Juni 2022 drei Titel ausgesucht buchmarkt.de/meldungen/drei-fuer-unsere-erde-empfehlungen-fuer-den-juni-2022 17 May 2022, BuchMarkt - Das Ideenmagazin für den Buchhandel: "Drei für unsere Erde" - Empfehlungen für den Juni 2022. Die Deutsche Akademie für Kinder- und Jugendliteratur hat für den Monat Juni 2022 drei Titel ausgesucht buchmarkt.de/meldungen/drei-fuer-unsere-erde-empfehlungen-fuer-den-juni-2022 . Siehe auch Buchtipps-Seite der Akademie 30 Apr 2022, Anthropozän-, PH NÖ: Präsentation an der PH NÖ: Mutmach-Buch mit Visionen für eine gute Zukunft(von Walter Fikisz) anthropozaen.hypothesen.org/1466 . Apr 2022, Kinderbuchkiste: WERde wieder wunderbar. Ein fantastisches Kinder-Sachbuch über unseren Lebensraum Erde, den es zu schützen und zu reparieren gilt (mit einer fiktiven Comic Geschichte, die den roten Faden liefert). Zur Rezension . 29 Apr 2022, Mediabox, PH NÖ: Mutmach-Buch mit Visionen für eine gute Zukunft. Buchpräsentation an der Pädagogischen Hochschule Niederösterreich siehe hier .
Leinfelder	12 Jan 2022	SWR2 Wissen (Radio): Der Mensch als geologische Kraft - Leben wir im "Anthropozän"?, Interview mit R.Leinfelder, 8:30, Mediathek: https://www.swr.de/swr2/wissen/der-mensch-als-geologische-kraft-leben-wir-im-anthropozaen-102.html
Leinfelder	9 April 2022, 20:15-22:35:	TV Documentary ZDFinfo, Terra X: Anthropozän - Das Zeitalter des Menschen, Part 1-3" (Erde, Wasser, Luft), Scientific Advisors H.R. Bork, M. Glaubrecht, R. Leinfelder, R. Simek. Mediathek: https://www.zdf.de/dokumentation/terra-x/anthropozaen-das-zeitalter-des-menschen-trailer-100.html
Leinfelder	19 Jul 2022, 10:05	Deutschlandfunk Kultur (Radio), Lesart: Klimawandel in Graphic Novels. Von düsteren Aussichten und der Hoffnung im Protest. Die Literatur hat längst den

Contributed	Date	Details of media
		Klimawandel als drängendes Thema entdeckt. Auch Graphic Novels greifen die Bedrohung durch die Erderwärmung auf und eignen sich besonders gut, das Drama der Klimakatastrophe zu erzählen. Welche davon sind zu empfehlen?
Leinfelder	21 Sep 2022	Castellano Hablantes: Transformacion de los recursos naturales ejemplos. https://castellanohablantes.es/economia/transformacion-de-los-recursos-naturales-ejemplos/
Leinfelder	23 Sep 2022	Scientists for Future: Statement von Reinhold Leinfelder auf der Klimastreik-Demo Berlin zum Weltklimastreik (23.Sep. 2022) https://www.instagram.com/p/Ci2SuEcAR4f/
Leinfelder	18 Oct 2022	ARD Alpha: Anthropozän. Zeitalter des Menschen (Textfeature - Update for an earlier TV ARD-Alpha-Documentary).
Leinfelder	19 Nov 2022	Redaktionsnetzwerk Deutschland: Anthropozän: Wann genau begann das Menschenzeitalter? (based on dpa-text-feature). https://www.rnd.de/wissen/anthropozaens-wann-genau-begann-das-menschenzeitalter-H7EFR4AMYNH5BMONWCMXMZCGD4.html
Leinfelder	26 Nov. 2022	ntv-tv.de: Erdzeitalter des Menschen. Wann begann das Anthropozän? (Textfeature). https://www.ntv.de/wissen/frageantwort/Wann-begann-das-Anthropozaen-article23740379.html
Leinfelder	9 Dec 2022, 8:30	SWR2 Wissen (Radio): Der Mensch als geologische Kraft - Leben wir im "Anthropozän"?, Interview mit R.Leinfelder, 8:30, Mediathek: https://www.swr.de/swr2/wissen/der-mensch-als-geologische-kraft-leben-wir-im-anthropozaen-102.html (rerun)
McCarthy	20 Feb 2022	Interview with CHCH TV- Coring Crawford Lake – a potential golden spike. Aired Feb. 20, 2022
McCarthy	7 March 2022	Interview with Canadian ROM Magazine. The Dawn of the Anthropocene. Published Summer 2022.
McCarthy	11 April 2022	Interview with American Orion Magazine. The Search for the Golden Spike. Published July 15, 2022. Orion Magazine - The Search for the Golden Spike
McCarthy	21 Nov 2022	Interview with climate reporter for the New York Times about Crawford Lake and the quest for the golden spike - to be published 2023
McCarthy	21 Nov 2022	Interview with Canadian CBC Radio One Quirks and Quarks Pinpointing the Anthropocene. Where is the signature of the age of humans? Aire Dec 3 2022
Turner	03 Jan 22	"Shifting Sands or Set in Stone? Consensus in Charting the Geological History of Earth," (https://www.anthropocene-curriculum.org/contribution/shifting-sands-or-set-in-stone)
Turner	14 Dec 22	Cosmic Conversations "Inhabiting an Alien Planet: adaptation and inadaptation. Patricia Reed and Simon Turner mediated by Fernando Silva e Silva. https://www.youtube.com/watch?v=N07OweSVnxw
Wagreich	7 June 2022	Interview, mainly about the Anthropocene and Plutonium, with Monika Halkort, Ö1 National Radio Austria.
Wagreich	13 June 2022	Science Talk „Wetterextreme das neue Normal? Welche Klimaziele wir (noch) erreichen können“. Panel discussion by Bundesministerium für Bildung, Wissenschaft und Forschung,

Contributed	Date	Details of media
		Abteilung Öffentlichkeitsarbeit / Wissenschaftskommunikation, together with Kurier (Austrian newspaper), Vienna.
Wagreich	16-18 June 2022	Panel discussion "Climate Change and Security", at Forum Anthropozän, National Park Hohe Tauern, Mallnitz, Austria
Wagreich	6 July 2022	Interview, mainly about the Anthropocene, Karlsplatz Vienna site and the GSSPs, with David Kattenburg, CBC Radio.
Wagreich	6 Dec 2022	Interview, mainly about the Anthropocene, Karlsplatz Vienna site and the GSSPs, with David Kattenburg, CBC Radio.
Waters	29 Jan 22	Hunting the Anthropocene's dawn [Interview with Adam Vaughan for New Scientist p.14-15]
Waters	6 May 22	Bids for Anthropocene's 'golden spike' emerge [Interview with Paul Voosen for Science, Vol. 376, issue 6593 p.562-563]
Waters	6 May 22	The Age of Humans [Interview with Saphora Smith for the UK newspaper The Independent]
Waters	13 May 22	La Geología del Antropoceno: Investigación, Genealogía Y Controversia Sobre El Impacto Humano Contemporáneo En El Ambiente Global. [Interview with Roberto Andrés in eDiarioAR- in Spanish]
Waters	18 May 22	Eine einmalige Dominanz in der Erdgeschichte [Interview with Christian Schwägerl for Frankfurter Allgemeine Zeitung]
Waters	19-22 May 22	Pressespiegel: Unearthing the Present [HKW interview]
Waters	21 June 22	Searching for evidence of the Anthropocene [interview with Bryony Cottam for Geographical]
Waters	24 June 22	Humanity left an irreversible imprint upon Earth's rocks. Here's how. [Interview with Andrew Curry for National Geographic]
Waters	28 Jul 22	Was schrieb die Ostsee in ihr Tagebuch? [Interview with Die Zeit- in German]
Waters	20 Sep 22	Home - the Story of Earth [Filmed interview for ABC TV series]
Waters	17 Nov 22	כולם מרגישים את עידן האדם. אבל איך מוכיחים שהוא החל - ומתי? [Interview with Gidon Lev for the Israeli newspaper Haaretz, in Hebrew]
Waters	19 Nov 22	"Searching for the site that best represents the impact of humans on the planet" [Interview with Miguel Ángel Criado for Spanish newspaper El País]
Waters	02 Dec 22	Radio interview on "Quirks & Quarks" CBC Radio One
Waters	11 Dec 22	"Are we in the Anthropocene? Scientists vote on sites that may mark the beginning of an epoch" Interview with Genelle Weule, ABC Science. https://www.abc.net.au/news/science/2022-12-12/anthropocene-epoch-golden-spike-vote/101711314
Waters	13 Dec 22	"Are we in the Anthropocene? Geologists could define new epoch for Earth" [Interview with McKenzie Prillaman for Nature https://www.nature.com/articles/d41586-022-04428-3
Waters	15 Dec 22	"Eine Heimat für das Anthropozän" [Interview with Christoph von Eichorn, appearing in German newspaper Süddeutsche Zeitung]
Waters	17 Dec 22	"For Planet Earth, This Might Be the Start of a New Age" [Article in New York Times authored by Raymond Zhong; also front page of Sunday NY Times 18 Dec 22]
Waters	19 Dec 22	Interview with Senne Starckx for Flemish newspaper De Standaard

MEMBERSHIP TO DATE

Listed here are names of members to date and their contact details (as of 1st January 2023). Membership is distinguished between voting and advisory. Voting members will vote on the GSSP candidate selection.

An Zhisheng (Advisory)

State Key Laboratory of Loess and Quaternary Geology, The Institute of the Earth Environment, Chinese Academy of Sciences (CAS), 10 Fenghui South Road, Xi'an High-Tech Zone, Xi'an 710075, China
e-mail: anzs@loess.llqg.ac.cn

Tony Barnosky (Voting)

Jasper Ridge Biological Preserve, Stanford University, Stanford, CA 94305 USA.
e-mail: tonybarnosky@stanford.edu

Alejandro Cearreta (Voting)

Departamento de Geología, Facultad de Ciencia y Tecnología, Universidad del País Vasco UPV/EHU, Apartado 644, 48080 Bilbao, Spain
e-mail: alejandro.cearreta@ehu.eus

Andy Cundy (Voting)

School of Ocean and Earth Science, National Oceanography Centre (Southampton) University of Southampton, European Way, Southampton, SO14 3ZH, UK
e-mail: A.Cundy@noc.soton.ac.uk

Matt Edgeworth (Advisory)

Honorary Research Fellow, School of Archaeology and Ancient History, University Road, Leicester, LE1 7RH, UK
e-mail: me87@leicester.ac.uk

Erle Ellis (Advisory)

Department of Geography & Environmental Systems, 211 Sondheim Hall, University of Maryland, Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21250 USA
e-mail: ece@umbc.edu

Ian Fairchild (Voting)

School of Geography, Earth and Environmental Sciences, University of Birmingham B15 2TT, UK
e-mail: i.j.fairchild@bham.ac.uk

Barbara Fiałkiewicz-Koziel* (Voting)

Biogeochemistry Research Unit, Faculty of Geographical and Geological Sciences, Adam Mickiewicz University, 61-712 Poznań, Poland
e-mail: barbara.fialkiewicz-koziel@amu.edu.pl

Agnieszka Gałuszka (Voting)

Institute of Chemistry, Jan Kochanowski University
7 Uniwersytecka St, 25-406 Kielce, Poland.
e-mail: aggie@ujk.edu.pl

Philip Gibbard (Voting)

Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER, UK
e-mail: plg1@cam.ac.uk

Jacques Grinevald (Advisory)

IHEID, Chemin Eugène Rigot 2, 1211 Genève 11 Switzerland
e-mail: jacques.grinevald@graduateinstitute.ch

Peter Haff (Advisory)

Nicholas School of the Environment, Duke University, 103 Old Chem Box 90320 Durham NC27708 USA
e-mail: pkhaff@gmail.com

Irka Hajdas (Voting)

Laboratory of Ion Beam Physics, ETH Otto-Stern-Weg 5, 8093 Zurich, Switzerland
e-mail: hajdas@phys.ethz.ch

Han Yongming (Voting)

State Key Laboratory of Loess and Quaternary Geology, The Institute of the Earth Environment, Chinese Academy of Sciences (CAS), 10 Fenghui South Road, Xi'an High-Tech Zone, Xi'an 710075, China
e-mail: yongming@ieecas.cn

Martin Head (Voting)

Department of Earth Sciences, Brock
University, 1812 Sir Isaac Brock Way, St.
Catharines, ON, L2S 3A1 Canada
e-mail: mjhead@brocku.ca

Juliana Assunção Ivar do Sul (Advisory)

Leibniz Institute for Baltic Sea
Research Warnemünde (IOW)
Seestrasse 15, 18119 Rostock – Germany
e-mail: juliana.ivardosul@io-warnemuende.de

Catherine Jeandel (Advisory)

LEGOS, Université de Toulouse, CNES, CNRS,
IRD, 14 avenue Edouard Belin, 31400
Toulouse, France.
e-mail: catherine.jeandel@legos.obs-mip.fr

Reinhold Leinfelder (Voting)

Dept. of Geological Sciences, Freie
Universität Berlin,
Malteserstraße 74 - 100, building D, D-
12249 Berlin, Germany
e-mail: reinhold.leinfelder@fu-berlin.de

Francine McCarthy (Voting)

Department of Earth Sciences, Brock
University, 1812 Sir Isaac Brock Way, St.
Catharines, ON, L2S 3A1 Canada
e-mail: fmccarthy@brocku.ca

John McNeill (Advisory)

Georgetown University Washington DC USA
e-mail: mcneillj@georgetown.edu

Eric Odada (Advisory)

Geology Department, University of Nairobi,
Chiromo Campus, Riverside Drive, P.O. Box
30197. Nairobi, Kenya
e-mail: eodada@uonbi.ac.ke

Naomi Oreskes (Advisory)

The Department of the History of Science,
Harvard University, Cambridge,
MA 02138, USA
e-mail: oreskes@fas.harvard.edu

Clément Poirier (Advisory)

Morphodynamique Continentale et Côtière,
Normandie Université, UNICAEN,
UNIROUEN, CNRS; M2C, 24 rue des Tilleuls,
F-14000 Caen, France
e-mail: clement.poirier@unicaen.fr

Dan Richter (Advisory)

Nicholas School of the Environment
Duke University, 9 Circuit Drive, Box 90328,
Durham, NC 27708, USA
e-mail: drichter@duke.edu

Neil Rose (Voting)

Environmental Change Research Centre,
Department of Geography,
University College London, Gower Street,
London WC1E 6BT, UK
e-mail: n.rose@ucl.ac.uk

Yoshiki Saito (Voting)

Estuary Research Center, Shimane
University, 1060, Nishikawatsu-cho,
Matsue, 690-8504, Japan
e-mail: ysaito@soc.shimane-u.ac.jp

Bill Shotyk (Advisory)

Department of Renewable Resources,
University of Alberta, 348B South Academic
Building, Edmonton, Alberta T6G 2H1,
Canada
e-mail: shotyk@ualberta.ca

Will Steffen (Advisory) †

The Australian National University,
Canberra ACT 0200, Australia.
e-mail: will.steffen@anu.edu.au

Colin Summerhayes (Voting)

Scott Polar Research Institute, University of
Cambridge, Lensfield Road,
Cambridge CB2 1ER, UK
e-mail: cps32@cam.ac.uk

Jaia Syvitski (Voting)

Institute of Arctic and Alpine Research,
University of Colorado, Boulder Campus,
Box 545, Boulder CO, 80309-0545, USA
e-mail: jai.syvitski@colorado.edu

Simon Turner (Secretary, Voting)

Environmental Change Research Centre,
Department of Geography,
University College London, Gower Street,
London WC1E 6BT, UK
e-mail: simon.turner@ucl.ac.uk

Davor Vidas (Advisory)

Law of the Sea and Marine Affairs
Programme, The Fridtjof Nansen Institute,
Fridtjof Nansens vei 17, PO Box 326, 1326
Lysaker, Norway
e-mail: Davor.Vidas@fni.no

Michael Wagreich (Voting)

Department of Geology, University of
Vienna Althanstrasse 14, A-1090 Vienna,
Austria
e-mail: michael.wagreich@univie.ac.at

Colin Waters (Chair, Voting)

School of Geography, Geology and the
Environment, University of Leicester,
University Road, Leicester LE1 7RH, UK
e-mail: cw398@leicester.ac.uk

Mark Williams (Voting)

School of Geography, Geology and the
Environment, University of Leicester,
University Road, Leicester LE1 7RH, UK
e-mail: mri@leicester.ac.uk

Scott Wing (Voting)

Dept. of Paleobiology, Museum of Natural
History
Smithsonian Institution, Washington DC,
20013 USA.
e-mail: wings@si.edu

Jan Zalasiewicz (Voting)

School of Geography, Geology and the
Environment, University of Leicester,
University Road, Leicester LE1 7RH, UK
e-mail: jaz1@leicester.ac.uk

Jens Zinke (Voting)

School of Geography, Geology and the
Environment, University of Leicester,
University Road, Leicester LE1 7RH, UK
e-mail: jz262@leicester.ac.uk

NEWS

March 3, 2023, 9:00pm-10:00pm GMT AAAS Annual Meeting,

Who owns the Anthropocene: Geoscientists Plan Votes in 2023 to Decide
Washington DC, USA (and online)

More details: <https://aaas.confex.com/aaas/2023/meetingapp.cgi/Session/29881>

June 28 - July 2, 2023, The Seventh Biennial Conference of East Asian Environmental History. Multiple Crises and the Asian Anthropocene: Climatic, Ecological, and (Post)Colonial Perspective. Korea Advanced Institute of Science and Technology (KAIST) and Institute for Basic Science (IBS) in Daejeon, South Korea
More details <http://www.aeah.org/eah2023.htm>

11th-13th July 2023. STRATI 2023

SC2: The Anthropocene: stratigraphical concepts and evidence session
Lille, France. Abstract Submission deadline 28 February 2023

More details: <https://strati2023.sciencesconf.org>

14-20th July 2023. XXI INQUA Congress. Time for Change. 6B - GSSPs and Stratotypes; Session 40: The Anthropocene as a tool for characterizing recent planetary change and predicting future environmental challenges.

More details: <https://inquaroma2023.org/conference-sessions/#690a9b9b5abb83736>

Other news

Wagreich: A new project started in Austria, "UrbAn.CVie - From Romans to the Anthropocene, from Carnuntum to Vienna: An Urban Anthropocene Field Lab", funded by the Vienna Science and Technology Fund WWTF. The main topic is a regional study based on geochemistry and GIS methods applied to anthropogenic deposits and Danube flood plain sediments characterizing the Anthropocene Transformation east of Vienna.

Project website: <https://geologie.univie.ac.at/projekte/urbancvie-wwtf-esr20-027/>

Wagreich: The annual meeting and workshop of UNESCO IGCP 732 "LANGUAGE of the Anthropocene" was organized by Lydia Olaka (Nairobi) and Veronika Koukal (Vienna) in a hybrid setting to enable participation of as many scientists and students from different countries as possible. The meeting "Nairobi's Anthropocene 2022 – past, present and future archives" took place at Nairobi, Kenya, involving 75 scientists, 57 of them from developing countries with Nairobi focussed, environmental focussed, and technical focussed presentations, skills sessions, and discussions. Several members of the AWG were involved in these activities.
Project website: <https://igcp732.univie.ac.at/>

ANTHROPOCENE WORKING GROUP: PROGRAMME FOR 2023

The focus for early 2023 is the completion of the voting to identify the candidate GSSP site, from which confirmation of the proposed age of onset of the Anthropocene will be determined. It will also be necessary, through further voting, to identify which of the remaining sites involved in the study will then be proposed as Standard Auxiliary Boundary Stratotypes. These, and the binding vote on rank, will contribute to the development of the formal AWG submission to SQS. There are two significant conferences to be held during the summer in which it is hoped that there will be Anthropocene sessions: the 4th International Congress on Stratigraphy Strati 2023 at Lille, France on 11-13th July and the XXI Congress of the International Union for Quaternary Research INQUA 2023 in Rome from 13-20th July, titled "Time for Change". Although, as a working group we are moving towards the final phase of our remit of producing a formal proposal, we will endeavour to continue researching diverse aspects of the Anthropocene concept and investigate options for continuation of such stimulating debate and research beyond the eventual disbanding of the AWG. We look forward to working with you on this pivotal year in the AWG's history.

Colin Waters (AWG Chair)
Simon Turner (AWG Secretary)

February 2023