Newsletter of the Anthropocene Working Group

Anthropocene Working Group

Volume 8: Report of activities 2018

December 2018

International Union of Geological Sciences
International Commission on Stratigraphy

Subcommission on Quaternary Stratigraphy
http://quaternary.stratigraphy.org/workinggroups/anthropocene/

Table of Contents

Newsletter edited by Colin Waters, Jan Zalasiewicz and Alex Damianos.

Thanks to all colleagues who contributed to this Newsletter.

Cover Illustration: Attendees at the Anthropocene Working Group meeting held in Mainz, 5-8 September 2018, hosted by the Max-Planck Institute for Chemistry. Photo taken by Neli Mihaylova (MPIC).

CHAIRMAN'S COLUMN

Dear all,

This year, considerable effort has gone into summarizing the stratigraphic evidence that the AWG and others have gathered to date, in our Cambridge University Press volume on the Anthropocene. This volume brings together in coherent form evidence that is otherwise scattered throughout many disparate publications. Although it is (of course) already out of date, hopefully it will act as a widely useful sourcebook, and springboard for our continuing activities.

Those activities have been most ably co-ordinated as ever by Colin Waters (as seen, not least, in the prompt appearance of this annual report), while a very welcome recent development has been the contribution provided by Alex Damianos, who as part of his PhD is now working as an intern for the AWG: Alex has already, for instance, revived and begun to update our long-dormant website. We also welcome two new members to the group, Neil Rose and Bill Shotyk, who both contributed greatly to the GSSP paper in Earth-Science Reviews and Neil continued with contributions to the CUP book.

Among the activities, a primary task, now begun, is to foster the search for candidate Anthropocene GSSP stratotypes. There are promising developments, for instance the Crawford Lake section in Canada where a team headed by Martin Head and Francine McCarthy have begun work, as have a team from the Leibniz Institute for Baltic Sea Research in Warnemuende (including Juliana Assunção Ivar do Sul) examining an anoxic marine basins and possibilities clearly exist among the Chinese lake sections described by An Zhisheng and Li Li at Mainz, in the high-resolution coral archive, and elsewhere. This detailed and painstaking work will undoubtedly take several years. A recent announcement that Bernd Scherer at the Haus der Kulturen der Welt (HKW) in Berlin has secured funding to contribute to this undertaking represents a step-change in the progress of this programme of analysis. Meanwhile, we will explore the suggestion, made at the Mainz meeting by Martin and his SQS colleague Kim Cohen, of some kind of interim status for the Anthropocene based on our now much-improved understanding of its stratigraphic character, and we hope to develop closer and more active links with the SQS in general. There is work to do, too, on exploring the potential utility of a formalized Anthropocene, and its relation to related concepts.

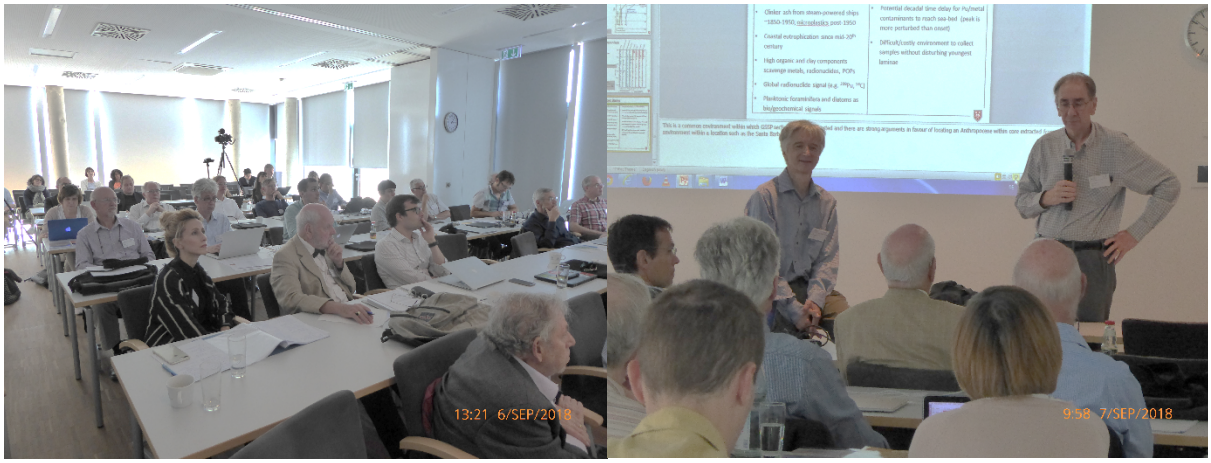
A highlight of the year was the meeting in September at the Max Planck Institute for Chemistry in Mainz, co-ordinated by Astrid Kaltenbach and Colin Waters, with a large, involved and enthusiastic set of participants, including Paul Crutzen on both days. This meeting was notable for the warmth, hospitality and positive collaborative spirit shown by our hosts and we hope to develop closer practical links with the MPI, not least regarding ongoing GSSP work. The meeting indeed stimulated the new AWG logo, MPI-designed from data assembled by Clément Poirier: showing change in rate of change of atmospheric CO_2 concentrations over 20 000 years, it all too clearly shows the Anthropocene as a vertical line after the Holocene/latest Pleistocene horizontal one.

Beyond the confines of chronostratigraphy, AWG members have been involved in the Anthropocene's continuing wider reach, through such means as Berlin's Haus der Kulturen der Welt's *Anthropocene Curriculum* project, the Burtynsky film *Anthropocene*, Erle Ellis's *Anthropocene* book and Peter Haff's *Being Human in the Anthropocene* blog. Moreover, 2018 saw the use of the Anthropocene as a framing concept in the IPCC *Special Report on Global Warming of 1.5° C* (thanks also to Will Steffen's contribution to it) and the WWF *Living Planet Report 2018*. These all remind us, if reminder was needed, that our particular corner of stratigraphy is not just a thing of the past.

Jan Zalasiewicz

FOURTH ANTHROPOCENE WORKING GROUP MEETING

The fourth meeting of the AWG, coordinated by Astrid Kaltenbach and Colin Waters, was held in Mainz on 5th–8th September 2018, kindly hosted by the Max-Planck Institute for Chemistry (MPIC). In addition to members of the AWG, numerous speakers and attendees, notably from the Max-Planck Institute, added richly to the debate. Presentations focussed upon the some of the relevant work currently undertaken at MPIC, the key signals and potential environments which could host a GSSP, the utility of the Anthropocene as a chronostratigraphic unit and the use of the term in the social sciences and arts.



Discussions at the Max-Planck Institute for Chemistry, Mainz. Photos by Astrid Kaltenbach (MPIC)

This is a brief summary of the main programme of presentations. Those speakers who are not members of the AWG have their affiliation shown. For multiple author presentations, the speaker is marked with an *.

Thursday, 6 September 2018

9:30 **Welcome to the Max Planck Institute for Chemistry**
Words of welcome by Institute director, *Ulrich Pöschl*

9:40 – 11:05 **<u>Session 1</u>: Introductions and ICS business**
9:40 Introductions by the meeting attendees
9:50 Outline of scope of meeting (*Jan Zalasiewicz*)
10:10 SQS progress for Holocene stage definitions (*Martin Head)*

10:30 ICS protocols and key concerns regarding formalisation (*Phil Gibbard)*
10:50 Discussion

11:20 – 13:00 <u>Session 2</u>: Max Planck Institute for Chemistry expertise

11:20 Climate Geochemistry Department (*Gerald Haug, Climate Geochemistry Dept., MPI*)
11:40 Organic Isotope Geochemistry Group (*Alfredo Martinez-Garcia, MPI*)
12:00 Organic Isotope Geochemistry Group (*Nicolas Duprey, MPI*)
12:20 Multi Phase Chemistry Department- Climate and Health in the Anthropocene
(*Uli Pöschl, Multiphase Chemistry Dept., MPI*)
12:40 Discussion

14:00 – 15:40 <u>Session 3</u>: GSSP/auxiliary section proposals

14:00 Anthropogenic deposits: Vienna (*Michael Wagreich*)
14:20 Peat deposits: Etang de Gruère (*Colin Waters*)
14:40 Trees (*Colin Waters* & Angus Winter, Univ. of Leicester*)
15:00 Discussion

15:40 – 17:40 <u>Session 4</u>: GSSP/auxiliary section proposals (continued)

15:40 Crawford Lake, Ontario, Canada: a prospective GSSP candidate for the Anthropocene Epoch (*Martin Head* & Francine McCarthy, Brock Univ.*).
16:00 Lake deposits: Huguangyan Maar (*An Zhisheng & Li Li, The Institute of the Earth Environment, Xi'an**)
16:20 Neobiota signals for biostratigraphy (*Mark Williams & Jan Zalasiewicz**)
16:40 Speleothems: Ernesto Cave (*Colin Waters* & Ian Fairchild*)
17:00 Discussion

Friday, 7 September 2018

09:00 – 10:20 <u>Session 5</u>: GSSP/auxiliary section proposals (continued

9:00 Ice (*Colin Summerhayes*)
9:20 Marine anoxic basins (*Colin Waters*)
9:40 Corals (*Reinhold Leinfelder*)
10:00 Radiocarbon bomb peak (*Irka Hajdas*)
10:20 Discussion

10:50 – 13:00 <u>Session 6</u>: 'Scientific utility' and 'societal (political) relevance'

10:50 Introduction and overview (*Davor Vidas & Jan Zalasiewicz**)
11:10 Utility to Earth sciences (*Jan Zalasiewicz)*
11:30 Utility of the Anthropocene to the Earth System science community (*Will Steffen*)
11:50 Utility Challenges of an Anthropocene Epoch for Ecology, Archaeology, and Geographic Science (*Erle Ellis*)
12:10 Connection between public health and climate change (*Jos Lelieveld, Atmospheric Chemistry Dept., MPI*)
12:30 Utility beyond physical and natural sciences: the example of international law theory development (*Davor Vidas & Jan Zalasiewicz**)
12:50 Discussion

14:00 – 16:05 <u>Session 7</u>: Anthropocene in the social sciences and arts

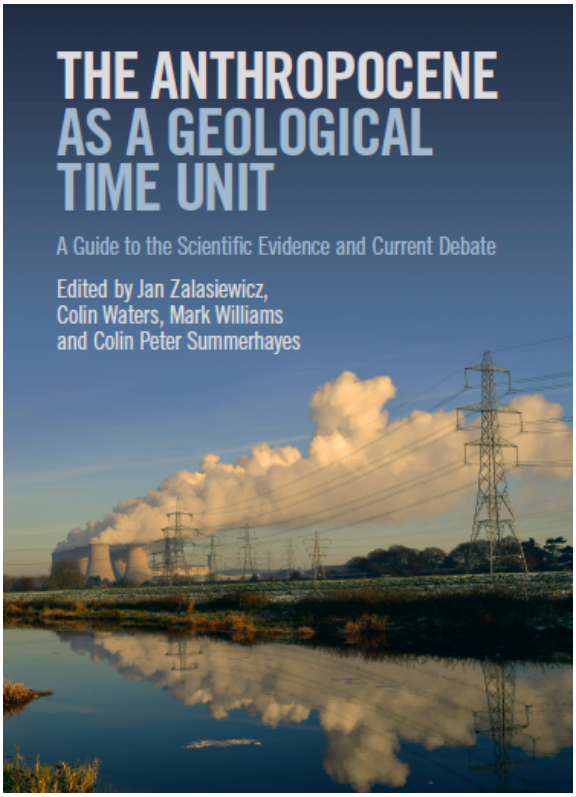
14:00 Preview of Anthropocene film from Mercury film

14:10 Two fundamental misconceptions as primary causes of global human impacts: Open cycling of matter and the myth of unlimited growth (*Max von Tilzer, Univ. of Konstanz*).
14:25 Archaeology and the Anthropocene (*Nicole Boivin, MPI Jena*)
14:45 The Anthropocene and global environmental history (*Franz Mauelshagen, IASS Potsdam*)
15:05 The Anthropocene in culture and art: HKW example (*Bernd Scherer, Haus der Kulturen der Welt Berlin*)
15:30 The Anthropocene Surge, tracking the life of data in modified ground (*Katrin Hornek, Univ. of Vienna*)
15:45 Discussion

16:20 – 17:40 Session 8: Funding, future plans and meeting conclusions
16:20 Summary of recent and potential funding bids (*Davor Vidas & Jan Zalasiewicz**)
16:45 Summary from a journalist's perspective and communicating the Anthropocene to a non-academic audience (*Nicola Davison, Journalist*)
17:00 Future plans and logistics of the AWG programme of work for 2019 and 2020 (*Jan Zalasiewicz)*

SELECTED PUBLICATIONS

The key AWG work over the course of 2018 has been the completion of the manuscript for the book **The Anthropocene as a geological time unit**. Compiled by the editors: Jan Zalasiewicz, Colin Waters, Mark Williams and Colin Summerhayes. ISBN: 9781108475235. Cambridge University Press aim to publish it by December 2018. An overview and Table of Contents is available here.



The editors also contributed to four feature articles in Geology Today Vol. 34 (pt. 5), listed below.

The Working Group has published over 2018, or has in press the following:

Waters, C.N., Zalasiewicz, J., Summerhayes, C., Fairchild, I.J., Rose, N.L., Loader, N.J., Shotyk, W., Cearreta, A., Head, M.J., Syvitski, J.P.M., Williams, M., Wagreich, M., Barnosky, A.D., An, Z., Leinfelder, R., Jeandel, C., Gałuszka, A., Ivar do Sul, J.A., Gradstein, F., Steffen, W., McNeill, J.R., Wing, S., Poirier, C., Edgeworth, M. (2018). A Global Boundary Stratotype Sections and Points (GSSPs) for the Anthropocene Series: Where and how to look for a potential candidate. Earth-Science Reviews, 178, 379-429. https://doi.org/10.1016/j.earscirev.2017.12.016

Williams, M. Edgeworth, M., Zalasiewicz, J., Waters, C.N., Steffen, W., Wolfe, A., Minter, N.J., Cearreta, A., Galuszka, A., Haff, P., McNeill, J., Revkin, A., Richter, D deB., Price, S., and Summerhayes, C. (2019, in press). Underground metro systems: a durable geological proxy of rapid urban population growth and energy consumption during the Anthropocene. Anthropocene. Routledge Handbook of Big History (Routledge Companions) edited by Craig Benjamin, Esther Quaedakers and David Baker. Published 15th February 2019.

Other Anthropocene-related papers/books have been published by AWG members over 2018:

Bauer, A.M. and Ellis, E.C. (2017). The Anthropocene divide: Obscuring understanding of social-environmental change. Current Anthropology, 59 (2), 209-215. —A response to this paper was provided by the following article — Zalasiewicz, J., Waters, C., Head, M.J., Steffen, W., Syvitski, J.P., Vidas, D., Summerhayes, C., and Williams, M. (2017). The geological and Earth System reality of the Anthropocene: Reply to Bauer and Ellis. Current Anthropology, 59 (2), 220-223.

Bennett, C.E., Thomas, R., Williams, M., Zalasiewicz, J., Edgeworth, M., Miller, H., Coles, B., Foster, A., Burton, E.J. and Marume, U. (2018). The broiler chicken as a signal of a human reconfigured biosphere. Royal Society Open Science, 5:180325. https://royalsocietypublishing.org/doi/pdf/10.1098/rsos.180325

Cearreta, A. (2018). In search of the human footprint in Geology (in Spanish). El País newspaper, Suplemento Ideas, 158, 4. https://elpais.com/elpais/2018/05/25/ciencia/1527259404_561627.html

Cearreta, A. (2018). Is there Anthropocene? (in Spanish). Investigación y Ciencia, 506, 88. https://www.investigacionyciencia.es/revistas/investigacion-y-ciencia/humanos-751/existe-el-antropoceno-16867

Cearreta, A., Irabien, M.J. and Gómez Arozamena, J. (2018). Recent anthropogenic transformation of the Pasaia Bay (Guipuzcoa): multidisciplinary analysis of its sedimentary record. Geogaceta, 64, 107-110. https://www.sociedadgeologica.es/publicaciones/geogaceta/2018_64.html

Cooper, A.H., Brown, T.J., Price, S.J., Ford, J.R. and Waters, C.N. (2018, online). Humans are the most significant global geomorphological driving force of the 21st century. Anthropocene Review. https://doi.org/10.1177/2053019618800234

Ellis, E.C. (2018). Anthropocene: a very short introduction. Oxford University Press. https://global.oup.com/academic/product/anthropocene-a-very-short-introduction-9780198792987?cc=gb&lang=en&

Ellis, E.C., Magliocca, N.R., Stevens, C.J. and Fuller, D.Q. (2018). Evolving the Anthropocene: Linking multi-level selection with long-term social-ecological change. Sustainability Science, 13 (1), 119-128. https://doi.org/10.1007/s11625-017-0513-6

Fairchild, I.J. (2018). Geochemical records in Speleothems. In: DellaSala, D.A. and Goldstein, M.I. (eds.) *Encyclopedia of the Anthropocene*, Volume 1: Geologic History and Energy, Elsevier Reference Modules, p 205-212.

Fox, T., Pope, M. and Ellis, E.C. (2017, online). Engineering the Anthropocene: Scalable Social Networks and Resilience Building in Human Evolutionary Timescales. The Anthropocene Review https://doi.org/10.1177/2053019617742415

Irabien, M.J., Cearreta, A., Serrano, H. and Villasante-Marcos, V. (2018). Environmental regeneration processes in the Anthropocene: The Bilbao estuary case (northern Spain). Marine Pollution Bulletin, 135, 977-987. https://doi.org/10.1016/j.marpolbul.2018.08.022

Kahiu, W. and Haff, P., in conversation with Rossée, C. (2018). "Future Worlds: Intelligent Soil, Technospheric Colonization, and a Habitat of Emotional Particles", chap. 37 in *Field to Palette: Dialogues on Soil and Art in the Anthropocene*, Toland, A., Stratton, J., and Noller, G.W. (eds.), CRC Press.

Leinfelder, R. (2018). Foreword Anthropocene in: Tom Hegen, (Hg) HABITAT - vom Mensch geprägte Lebensräume / Human-altered habitats Bielefeld (Kerber-Verlag), ISBN 978-3-7356-0502-3. (book is in German and English, released Nov 2018)

Leinfelder, R. (2018). Nachhaltigkeitsbildung im Anthropozän - Herausforderungen und Anregungen. In: LernortLabor - Bundesverband der Schülerlabore e.V. (Hrsg), MINT-Nachhaltigkeitsbildung in Schülerlaboren - Lernen für die Gestaltung einer zukunftsfähigen Gesellschaft, S. 130-141, Berlin, ISBN 978-3-946709-02-2.

Leinfelder, R. and Niebert, K. (2018): Willkommen im Anthropozän. Diskurs über das "Menschenzeitalter" als wissenschaftliche Basis für wirksame Politik. Umwelt Aktuell, 3/2018, 2-3, Deutscher Naturschutzring (Oekom-Verlag).Online-Version:https://www.oekom.de/fileadmin/zeitschriften/umak_Leseproben/ua2018-03-leseprobe.pdf

Steffen, W., Rockström, J., Richardson, K., Lenton, T.M., Folke, C., Liverman, D., Summerhayes, C.P., Barnosky, A.D, Cornell, S.E., Crucifix, M., Donges, J.F., Fetzer, I., Lade, S.J., Scheffer, M., Winkelmann, R. and Schellnhuber, H.J. (2018) Trajectories of the Earth System in the Anthropocene. Proceedings of the National Academy of Sciences (USA), doi:10.1073/pnas.1810141115

Sterner, T., Barbier, E.B., Bateman, I., van den Bijgaart, I., Crépin, A.-S., Edenhofer, O., Fischer, C., Habla, W., Hassler, J., Johansson-Stenman, O., Lange, A., Polasky, S. Rockström, R., Smith, H.G., Steffen, W., Wagner, G., Wilen, J.E., Alpízar, F., Azar, C., Carless, D., Chávez,

C., Coria, J., Engström, G., Jagers, S.C., Köhlin, G., Löfgren, Å, Pleijel, H. and Robinson, A. (2018). Policy design for the Anthropocene. *Nature Sustainability*, in press.

Summerhayes, C.P. and Zalasiewicz, J. (2018). Global warming and the Anthropocene. Geology Today, 34 (5), 194-200. https://doi.org/10.1111/gto.12247

Terrington, R.L., Silva, É.C.N., Waters, C.N., Smith, H., and Thorpe, S. (2018). Quantifying anthropogenic modification of the shallow geosphere in central London, UK. Geomorphology, 319, 15-34. https://doi.org/10.1016/j.geomorph.2018.07.005

Vidas, D. (2018). The Law of the Sea for a New Epoch? In: S. Hessler (ed.), Tidalectics: Imagining an Oceanic Worldview through Art and Science (The MIT Press, Cambridge MA, 2018), 125–134.

Vidas, D., Freestone, D., McAdam J. (2018). International Law and Sea Level Rise. Brill (In Press).

Wagreich, M. and Draganits, E. (2018). Early mining and smelting lead anomalies in geological archives as potential stratigraphic markers for the base of an early Anthropocene. The Anthropocene Review, 5(2), 177–201. https://doi.org/10.1177/2053019618756682

Waters, C.N. (2018). Artificial Ground. In: P.T. Bobrowsky, B. Marker (eds.), Encyclopedia of Engineering Geology, 30-44. Springer International Publishing. https://doi.org/10.1007/978-3-319-12127-7_21-1

Waters, C.N., and Zalasiewicz, J. (2018). Concrete: the most abundant novel rock type of the Anthropocene. In: Dominick A. DellaSala, and Michael I. Goldstein (eds.) The Encyclopedia of the Anthropocene, vol. 1, 75-85. Oxford: Elsevier https://doi.org/10.1016/B978-0-12-809665-9.09775-5

Waters, C., and Zalasiewicz, J. (2018). The Anthropocene and Its "Golden Spike". In: Burtynsky, E., Baichwal, J., and De Pencier, N. (eds) Anthropocene, 35-43. Art Gallery of Ontario.

Waters, C.N., Graham, C., Tapete, D., Price, S.J., Field, L., Hughes, A.G. and Zalasiewicz, J. (2018, online). Recognising anthropogenic modification of the subsurface in the geological record. Quarterly Journal of Engineering Geology and Hydrogeology. https://doi.org/10.1144/qjegh2017-007

Waters, C.N., Fairchild, I.J., McCarthy, F.M.G., Turney, C.S.M., Zalasiewicz, J., and Williams, M. 2018. How to date natural archives of the Anthropocene. Geology Today, 34 (5), 182-187. https://doi.org/10.1111/gto.12245

Williams, M., Zalasiewicz, J., Waters, C., Himson, S., Summerhayes, C., Barnosky, A. and Leinfelder, R. (2018). The palaeontological record of the Anthropocene. Geology Today, 34 (5), 188-193. https://doi.org/10.1111/gto.12246

Zalasiewicz, J., and Waters, C.N. (2018). Arguments for an official Global Stratotype Section and Point for the Anthropocene. In: Dominick A. DellaSala, and Michael I. Goldstein (eds.) The Encyclopedia of the Anthropocene, vol. 1, p. 29-34. Oxford: Elsevier.

Zalasiewicz, J., Gabbott, S.E. and Waters C.N. (in press). Chapter 23: Plastic Waste: how plastic has become part of the Earth's geological cycle. In: Trevor M. Letcher and Dan A. Vallero (eds.) Waste: A Handbook for Management, 2nd edition. Elsevier, New York. ISBN: 9780128150603.

Zalasiewicz, J., Waters, C., Summerhayes, C. and Williams, M. (2018). The Anthropocene. Geology Today, 34 (5), 177-181.

Zalasiewicz, J., Waters, C., Williams, M., Aldridge, D.C. and Wilkinson, I.P. (2018). The stratigraphical signature of the Anthropocene in England and its wider context. Proceedings of the Geologists' Association, 129 (3), 482-491. https://doi.org/10.1016/j.pgeola.2017.06.004.

Zalasiewicz, J., Waters, C. and Williams, M. (2017). Les strates de la ville de l'Anthropocène. Annales, Histoire, Sciences Sociales 72 (2) 329-351. https://doi.org/10.1017/S0395264917000567

Zalasiewicz, J. (2018). Evolution of the technosphere. UNESCO Courier, April-June 2018, 15-17.

KEY REPORTS BY OTHER INTERNATIONAL BODIES

Listed here are key reports from the past year that made extensive reference to the Anthropocene.

- Intergovernmental Panel on Climate Change (IPCC - WMO-UNEP) 2018. *Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.* World Meteorological Organization, Geneva, Switzerland, released on 8th October 2018. Included in Box 1.1 is a discussion of the Anthropocene concept and the work of the AWG. (available online: www.ipcc.ch)

- WWF 2018. *Living Planet Report - 2018: AIming Higher*. Grooten, M. and Almond, R.E.A. (Eds). WWF, Gland, Switzerland. The Anthropocene is mentioned throughout the report, with a section written by Owen Gaffney. The well-illustrated report includes a useful summary of recent biotic change relevant to our studies. https://www.worldwildlife.org/pages/living-planet-report-2018

- ILA. 2018. Report Committee on International Law and Sea Level Rise of the International Law Association (ILA). Brussels, Belgium. Includes a section on the Anthropocene concept as an overarching context for the committee's activities.

CONFERENCES/LECTURES

Mike Ellis and Peter Haff, poster at American Geophysical Union, Washington, DC.

Ellis, M.A., Haff, P.K., and Lazarus, E., GC31G-1327: Earth Operating System 5.0: Law as a Geological Process in the Anthropocene, 12/2018. https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/362660

Michael Wagreich presentation at EGU Vienna: Colin N. Waters, Michael Wagreich, Jan Zalasiewicz, Colin Summerhayes, Ian J. Fairchild, Neil L. Rose, Neil J. Loader, William Shotyk, Alejandro Cearreta, Martin J. Head, James P.M. Syvitski, Mark Williams, Anthony D. Barnosky, An Zhisheng, Reinhold Leinfelder, Catherine Jeandel, Agnieszka Gałuszka, Juliana A. Ivar do Sul, Felix Gradstein, Will Steffen, John R. McNeill, Scott Wing, Clément Poirier, Matt Edgeworth. Global Boundary Stratotype Section and Point (GSSP) for the Anthropocene Series: Where and how to look for potential candidates. European Geophysical Union SSP2.1 - Integrated Stratigraphy - Recent advances in stratigraphic systems and age modelling, on Friday, 13 April 2018.https://meetingorganizer.copernicus.org/EGU2018/EGU2018-4590.pdf

Reinhold Leinfelder presentation at EGU Vienna: Leinfelder, R. (2018): The Future of Reefs in the Anthropocene. Integrated high-resolution stratigraphy as a monitoring, assisting and predictive tool.- Geophysical Research Abstracts, Vol. 20, EGU2018-7256, 2018, European Geosciences Union General Assembly 2018, SSP2.1, https://meetingorganizer.copernicus.org/EGU2018/EGU2018-7256.pdf

Leinfelder, R. (2018): Welcome to the Anthropocene - The Earth in our Hands. European Geosciences Union - General Assembly 2018, Geoscience Information for Teachers (GIFT) Workshop, EOS1, Brochure with Program and Extended Abstracts, pp. 52-55, GIFT/EGU.

Posters: Das Anthropozän –Ein neues Erdzeitalter? (Michael Wagreich) and Das Anthropozän von Wien (K. Lappé, M. Meszar, K. Hornek, M. Wagreich. See also webpage: http://medienportal.univie.ac.at/uniview/forschung/detailansicht/artikel/die-vermessung-des-wiener-anthropozaens/

Environment in conversation: The end of nature? Life in the Anthropocene. 17th April, Natural History Museum, Vienna. Presentation title "Introductory lecture: The Anthropocene - Is the Human a new geological great power?" Also panel discussion also involving Eva Horn, Christian Schwägerl and Verena Winiwarter.

Michael Wagreich presentation at the XXI International Congress of the Carpathian Balkan Geological Association (CBGA), University of Salzburg (Austria), September 10-13, 2018: Colin N. Waters, Michael Wagreich, and the AWG. Candidates for Gobal Boundary Stratotype Section and Point (GSSP) for an Anthropocene chronostratigraphic unit.

Other specific presentations:

Alejandro Cearreta:

"The Anthropocene". Summer School on Climate Risk and the future of International Climate Policy, University of the Basque Country UPV/EHU and Basque Centre for Climate Change, Bilbao (E), 4 July 2018.

Expert Reviewer of the IPCC Special Report on 1.5ºC Global Warming (SR1.5, Second Order Draft).

Expert Reviewer of the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC, First and Second Order Drafts).

Serrano, H., Cearreta, A. and Irabien, M.J., "Recent geological record of human impact and environmental improvement in the Abra of Bilbao (N Spain): A geochemical and microfaunal approach", 15th International Symposium on Oceanography of the Bay of Biscay, Anglet (F), 5-7 June 2018.

Cearreta, A., Irabien, M.J., Gómez Arozamena, J. and Serrano, H., "Environmental impact of mining activity on the Suances estuary (N Spain), 9th Symposium on the Atlantic Iberian Margin, Coimbra (P), 4-7 September 2018.

"The Anthropocene: Are we living in a new geological time?, 10th Archaeological Meeting, Bilbao Archaeological Museum, 27 September 2018.

Agnieszka Gałuszka:

"Should a new epoch in the Earth's history be declared?" An open lecture to the public presented in the Centre of Geoeducation in Kielce, Poland on May 17th 2018

Reinhold Leinfelder:

Leinfelder, R. (2018). Welcome to the Anthropocene – The Earth in our Hands. EOS 1: Geoscience Information for Teachers (GIFT) Workshop. European Geosciences Union, General Assembly, Workshop EOS1, Vienna. Brochure with Program and Extended Abstracts, pp. 52-55, GIFT/EGU.
(https://meetingorganizer.copernicus.org/EGU2018/sessionprogramme)

The Future of Reefs in the Anthropocene. Integrated high-resolution stratigraphy as a monitoring, assisting and predictive tool

(Abstract: https://meetingorganizer.copernicus.org/EGU2018/EGU2018-7256.pdf , within Session "Tropical coral archives – Reconstructions of climate and environment beyond the instrumental record at society-relevant timescales",
https://meetingorganizer.copernicus.org/EGU2018/orals/28768)

8 Feb 2018: **Panel discussion "Science, policy & global sustainability"** German Future Earth Summit, Berlin.

26 May 2018: **Von der Umwelt zur Unswelt - Das Potenzial des Anthropozän-Konzeptes für den Geographieunterricht**. Landesfachtagung Geographie, Kiel / Associaton of Geography Teachers, Schleswig-Holstein, Annual meeting, Kiel.

30 May 2018: **Keynote: Das Anthropozän - Die Erde in unserer Hand**. Öff. Tagung "Das Anthropozän" - Muss und kann der Mensch die Verantwortung für die Zukunft der Erde übernehmen? (im Rahmen der Design-Tage 2018), Coburg.

4 Jun 2018: **Salon: Holozän oder Anthropozän.** Salongespräch in der Komischen Oper Berlin, in Kooperation mit der Schering-Stiftung.

9 Jun 2018: **Vortrag: Technofossilien, Lazarus-Riffe und Neonatur - Ökologie und Geologie im Anthropozän** (sowie weitere Aktivitäten zu Riffen und Plastik. Lange Nacht der Wissenschaften (Geocampus Lankwitz, Freie Universität Berlin)

14 Jun 2018: **Die Zukunft im Anthropozän gestalten - Herausforderungen und Chancen für einen integrativen BNE-Ansatz**. BNE-Kolloqium der Pädagogischen Hochschule Heidelberg.

19 Jun 2018: **Die Zukunft nachhaltig gestalten - Das Potenzial des Anthropozän-Konzeptes für Multiplikatoren und Lernlabore.** Keynote, BNE-Tour 2018 des Nationalen Aktionsplans Bildung für nachhaltige Entwicklung (BNE), in Koop. mit der Deutschen UNESCO-Kommission. Berlin, Freie Universität

19 Sep 2018: **The Anthropocene revisited - Conceptional levels, new narratives and future pathways**. Summerschool at the Institute for Advanced Sustainability Studies (IASS), Potsdam.

9 Oct 2018: **"Macht Euch die Erde untertan!" Anthropozän oder das Ende der Erde?**. VIX. Albert-Gespräch, Albertus-Magnus-Stiftung Köln

13 Dec 2018: **Das Anthropozän - von der geowissenschaftlichen Analyse zur Zukunftsverantwortung**. Vortragsreihe "Mensch-Umwelt", Geographische Gesellschaft München, Department für Geographie, LMU München,

Reinhold Leinfelder was member of the Advisory Council for the exhibition "MenschenWelt" of the German Federal Foundation for the Environment (DBU), also presenting the opening talk: 28 Aug 2018: **Planetare Leitplanken als Wegweiser der MenschenWelt**. Eröffnungsvortrag zur Ausstellung "MenschenWelt" am DBU-Zentrum für Umweltkommunikation, Osnabrück

J.R. McNeill:

"Environmental History in the USA and the Anthropocene," Encuentro Anual de la Red Española de Historia Ambiental, University of Granada (8 November)

"The Anthropocene and a Spanish Coastal Delta," LSU College of the Coast and Environment (9 February)

"The Anthropocene Debates," Arizona State University (25 January)

Will Steffen:

"The Anthropocene: Where is the Earth System going?" University of the Third Age, Canberra, Australia, 15 February.

"The Anthropocene: Rising Risks, Critical Choices" Cambridge Institute for Sustainability Leadership seminar, Melbourne, Australia, 5 March.

"The Anthropocene: Rising Risks, Critical Choices", University of Queensland public lecture, Brisbane, Australia, 7 March.

"The Anthropocene: Rising Risks, Critical Choices", The Australian National University Emeritus Faculty seminar series, Canberra, Australia, 4 April.

"The Anthropocene: Rising Risks, Critical Choices", Another Development Foundation seminar, Umeå, Sweden, 11 June.

"The Anthropocene, Planetary Boundaries and the Biosphere: Challenges of the 21st Century, European Congress of Conservation Biology 2018, Jyväskylä,, Finland, 15 June.

"Rethinking Design and Planning for the Anthropocene Transition", Anthropocene Transition Project, University of Technology- Sydney, Sydney, Australia, 27 August.

"The Anthropocene: Challenges of the Human Age", University of Technology-Sydney public lecture, Sydney, Australia, 28 August.

"The Anthropocene: Challenges of the Human Age", University of Technology-Sydney public lecture, Sydney, Australia, 28 August.

Anthropocene: Rising Risks, Critical Choices", Australian Intercultural Foundation, Sydney, Australia, 29 August.

"The Earth System, the Anthropocene and Planetary Boundaries", Common Home for Humanity launch symposium, Porto, Portugal, 24 September.

"Earth System Dynamics: A systems approach to the Anthropocene", University of Porto public lecture, Porto, Portugal, 25 September.

"The Anthropocene: Rising Risks, Critical Choices", XV Chilean Geological Congress, Concepción, Chile, 22 November.

Colin Summerhayes:

"Welcome to the Anthropocene – Can we Engineer our Planetary Future?" Guildford Institute Climate Change Course Lecture, July 23, 2018

"The Anthropocene: How Humans have Changed Our Earth". Three Counties Science Group, WI, Shalford, Surrey, October 22, 2018.

"The Anthropocene: How Humans have Changed Our Earth". Mole Valley Geological Society, Dorking, November 8, 2018.

"The Science of the Anthropocene: Humanity's Effects on the Surface of the Planet." U3A, Guildford, December 11, 2018.

J.P. Syvitski with contributions from the Anthropocene Working Group:

The Anthropocene— from concept to Geological Epoch. 20th International Sedimentological Congress, Quebec City, August 13-17, 2018. Keynote presentation Aug. 13, 2018. http://isc2018.org/sites/ics2018/files/ias_abstract_2018_syvitski.pdf

Davor Vidas:

"International Law and Sea Level Rise: the mandate and the work of the ILA Committee, 2012-2018". Speech by the Committee Chair at the 78th Biennial Conference of the International Law Association, Sydney, Australia, 19-24 August 2018.

"The Law of the Sea for an Anthropocene Epoch". Invited speech at the Research Council of Norway "Ocean Science" Conference, Lillestrøm, Norway, 24-25 October 2018: https://www.fni.no/news/changing-oceans-in-the-anthropocene-norway-takes-a-leadership-role-article1844-330.html

Michael Wagreich:

Interview with Standard Newspaper:
https://mobil.derstandard.at/jetzt/livebericht/2000085765001/chat-am-mittwoch-geologe-wagreich-beantwortet-ihre-fragen-zum-zustand-der-erde

Collaboration on Dossier of Austria Pres Agency "Das Erdzeitalter der Menschen" (05/2018):
https://science.apa.at/dossier/Das_Erdzeitalter_der_Menschen/SCI_20180528_SCI78995083642464394

Contribution to "Forum Anthropozän", including a press conference, a lecture and a plenary discussion in the Austrian National Parc Hohe Tauern, Carinthia, Austria (06/2018): https://uniclub.aau.at/forumanthropozaen/

The Anthropocene was also featured at the Long Night of Research of Austria, which took place on Friday April 13th.

Colin Waters:

"The Anthropocene: an overview of geological assessment to date". Quaternaire11: Orléans 13-15th February 2018.

"Human transformation of the planet and the inception of the Anthropocene" Leicester Skeptics 20th February 2018.

"The Anthropocene: an overview of geological assessment to date". North Eastern Geological Society, Durham 16th March 2018.

Keynote presentation at Manchester Municipal University School of Science and the Environment Research Day 7th June 2018.

Plastic pollution in a new Anthropocene world. Market Harborough 16th June 2018.

"The Anthropocene Epoch: the expression of the human footprint on the Earth". Groundwork Gallery King's Lynn Theories of the Earth - interactions between history, science and artistic practice 30th November.

AWARDS

Catherine Jeandel received the Georges Millot Award and Medal from the French Academy of Science "for her outstanding contribution to the study of the behaviour of metals and rare earths in the ocean." She has also been made a fellow of the American Geophysical Union.

J.R. McNeill received the Heineken Prize in history from the Royal Netherlands Academy of Arts and Sciences, awarded every two years for 'outstanding contributions to historical research.'

Jan Zalasiewicz received the Prestwich Medal from the Geological Society of London. This Medal is awarded every three years to persons '*who shall have done well for the advancement of the science of geology*'.

MEDIA

Specific media output related to work by members of the AWG include:

Alejandro Cearreta:

Interviewed in "The Anthropocene: Are we in a new geological time?" (in Basque) published in Hiruka magazine, January 2018. https://hiruka.eus/prentsa/389

Interviewed in "Today the Technosphere has more "species" than the Biosphere" (in Basque) published in Berria newspaper, 14 August 2018. https://www.berria.eus/paperekoa/1857/004/001/2018-08-14/egun_biosferan_baino_espezie_gehiago_daude_teknosferan.htm

Matt Edgeworth:

Conversation with environmental scientist Sharon George in "Plastic is now part of our planet's fabric – a scientist and archaeologist discuss what happens next?" published in The Conversation, November 27, 2018. https://theconversation.com/plastic-is-now-part-of-our-planets-fabric-a-scientist-and-archaeologist-discuss-what-happens-next-106019

Erle Ellis:

Opinion relating to Anthropocene published in the New York Time Sunday Review. https://www.nytimes.com/2018/08/11/opinion/sunday/science-people-environment-earth.html

Peter Haff:

Peter has developed a blog titled "Being Human in the Anthropocene": http://blogs.nicholas.duke.edu/anthropocene/.

Reinhold Leinfelder:
Feature on plastics and the Teufelsbergs in **ARTE TV , Plastik überall - Geschichten vom Müll**. 3 Apr 2018 (several rebroadcasts)

Hessischer Rundfunk-Inforadio, Wem gehört die Natur? (Funkkolleg), Von Dagmar Röhrlich, mit Jan Zalasiewicz, Peter Haff, Wolfgang Welsch, Katrin Böhning-Gaese, Bronislaw Szerszynski und Reinhold Leinfelder, 7 Apr 2018.

Tagesspiegel: Wenig Hoffnung für die bunten Paradiese Auf der Suche nach Rettung: Geobiologe Reinhold Leinfelder und sein Team erforschen die Anpassungsfähigkeit von Riffen; von Catarina Pietschmann, Beilage der Freien Universität vom 14 April 2018, S. B1.

Der Tagesspiegel, print, Wissen und Forschen, S. 25: **Die Spur des Menschen.** Sind Plastik und Atommüll genug, dieses Erdzeitalter "Anthropozän" zu taufen? In der Komischen Oper diskutierten Experten, 7 Jun 2018; English version: 8 Jun 2018: **University News, Freie Universität Berlin**: **Little Hope for the Colorful Paradises** The search for salvation: Geobiologist Reinhold Leinfelder and his team study the adaptability of reefs.

Deutschlandfunk , Das Ende der Unbesorgtheit - Die menschengemachte Natur und das Anthropozän. In Information und Musik; Mediathek siehe 21 Jun 2018.

Deutschlandfunk, zur **Neudefinition des Holozän und dem Verbleib des Anthropozän**. In Forschung Aktuell, Mediathek. 24 Jun 2018,

Gemeinsam Lernen. Zeitschrift für Schule, Pädagogik und Gesellschaft. 3/2018 (Themenheft Global Goals): **Das Anthropozän. Ein integratives Wissenschafts- und Bildungskonzept**. 1 Jul 2018.

Radio WDR 3, Albert-Gespräch: **Macht Euch die Erde untertan! Anthropozän oder das Ende der Erde?**. WDR-3 Forum, nähere Infos, danach via podcast, 14 Oct 2018.

Frankfurter Allgemeine Zeitung: **Welche Zukunft für die Städte unter Wasser?** print/ePaper, Seite N2, Nr. 241, 17 Oct 2018.

Reinhold Leinfelder's blog "Der Anthropozäniker" now also has a (mostly automatized) translation feature into english and other languages: https://scilogs.spektrum.de/der-anthropozaeniker/ English version available here.

Michael Wagreich:

Interview with Standard Newspaper and contributed to their science papers (in German) https://mobil.derstandard.at/jetzt/livebericht/2000085765001/chat-am-mittwoch-geologe-wagreich-beantwortet-ihre-fragen-zum-zustand-der-erde

Colin Waters:

Interview with Colin Barras http://www.bbc.com/future/story/20180205-the-unexpected-signposts-of-our-new-era

BBC Radio 4 Inside Science (Thursday 8th November 2018):
https://www.bbc.co.uk/sounds/play/m000118s (interviewed from 7m38s)

BBC Radio 4 Science in Action (Thursday 8th November 2018):
https://www.bbc.co.uk/sounds/play/w3cswmq9 (from 44s)

NEWS

- Bernd Scherer, Director of the Haus der Kulturen der Welt in Berlin has secured funding from the German government to allow a significant contribution to the phase of GSSP analysis. Funding will commence in January 2019 and last for two years. This funding will help support examination of existing sites being considered, and allow collection and analysis of core from additional sites, providing a broad suite of proxy analysis across diverse environments and globally distributed locations.

- Michael Wagreich & Katrin Hornek: The Anthropocene Surge - evolution, expansion and depth of Vienna's urban environment. Research project at University of Vienna.

- Alejandro Cearreta: The Anthropocene sedimentary record in coastal settings of N Spain. Research project at University of the Basque Country UPV/EHU (Bilbao, Spain).

- Colin Waters has been awarded a visiting Professorship at the University of Vienna from 15th March to 14th April 2019.

- Edward Burtynsky received award for Photo London's Master of Photography for 2018; Jan Zalasiewicz and Colin Waters went to Somerset House on 17th May for the award ceremony and exhibition of his work on the theme of the Anthropocene. https://photolondon.org/event/photo-london-master-of-photography-edward-burtynsky/

- Andrew Revkin, former AWG member has joined National Geographic and in May published a new book: Weather: An Illustrated History: From Cloud Atlases to Climate Change (Sterling Illustrated Histories).

- 54th Annual Meeting of the Geological Society of American (Northeastern Section), to be held March 17-19, 2019 in Portland, Maine. The session "Beyond Sustainabililty: The Anthropocene as a paradigm for thinking about the Earth across disciplines," convened by Gary Gomby, Central Connecticut State University and W. John Kress of the Smithsonian.

- 15th Spanish National Meeting on Quaternary, to be held July 1-5, 2019 in Bilbao (Spain). The session "Sedimentary record of the Anthropocene", convened by Alejandro Cearreta and Juan Remondo, University of Cantabria (Spain). https://www.ehu.eus/documents/9074919/10824803/ST1-Registro-sedimentario-Antropoceno.pdf/5f193636-15d4-1c92-eb12-709e256fc3d8; https://www.ehu.eus/xvreunioncuaternario

- Committee on International Law and Sea Level Rise of the International Law Association (ILA) presented the final report of the first phase of its mandate (2012-2018) at the 78th ILA Biennial Conference in Sydney, Australia, 19-24 August 2018. A section on the Anthropocene concept has been included in a part discussing the background for the Committee. The 2018 ILA Report is available online, at the ILA website, at: http://www.ila-hq.org/index.php/committees

- A related new by the Fridtjof Nansen Institute: https://www.fni.no/news/sydney-international-law-association-adopts-two-resolutions-on-sea-level-rise-article1805-330.html

NEW MEMBERS

2018 saw the introduction of two new working group members and the first AWG intern.

- **Alexander Damianos** has joined as the first AWG intern, assisting with the website and administrative management of the group and their activities. He is a PhD candidate at the law department of the London School of Economics & Political Science researching decision-making procedures in geology.

- **Neil Rose** is Professor of Environmental Pollution and Palaeolimnology at University College London (UCL). After completing his undergraduate degree in Chemistry with Geochemistry at the University of Leicester, he worked as a freshwater scientist with the British Antarctic Survey, spending over two years on the Signy Island base in the South Orkney Islands. His PhD and post-doctoral research has primarily focussed on the spatial and temporal distribution of pollutants, especially fly-ash particles, in natural archives focussing on lake sediments. His recent research has highlighted the role of climate change on the remobilisation of legacy pollutants from lake catchments, the toxic effects of combined contaminants on aquatic organisms and the potential for fly-ash to act

as a stratigraphic marker for the mid-20th century. Neil has over 30 years' experience in palaeolimnology and has undertaken research fieldwork in upland and mountain regions in many areas of the world. In the coming years he hopes to continue his work on fly-ash stratigraphy, expanding datasets into currently data-sparse areas of the world, especially the southern hemisphere, and to develop fly-ash records in marine sediments, peat sequences and, stemming from new collaboration within the AWG, explore the possibilities of the fly-ash record in corals.

- **William Shotyk** received his B.Sc. (Agr.) in Soil Science and Chemistry from the University of Guelph and a Ph.D. in Geology from the University of Western Ontario. Following postdoctoral research at the University of California, Riverside and UWO, he worked at the University of Berne in Switzerland where he completed a Habilitation in Geochemistry, in 1995. He became Professor at the University of Heidelberg in Germany, and Director of the Institute of Environmental Geochemistry, in October of 2000. He joined the Department of Renewable Resources at the University of Alberta in October of 2011, as the Bocock Chair in Agriculture and the Environment. With more than 230 publications, he was awarded the Philippe Duchaufour Medal for Soil System Science by the European Geoscience Union (2013) and was recently elected a Fellow of the Royal Society of Canada (2018). He is the founder and President of the Elmvale Foundation, a federally registered charity for environmental education which hosts the annual Elmvale Water Festival (www.elmvale.org). Over the past 40 years, with the help of family and friends, he has planted 25,000 trees (more than 50 species) on his family farm property near Elmvale, Ontario.

MEMBERSHIP TO DATE

Listed here are names of members to date and their contact details (as of 1st December 2018).

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

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

Paul Crutzen
Max-Planck-Institute for Chemistry, Department of Atmospheric Chemistry,
PO Box 3060, D-55020 Mainz, Germany
e-mail: paul.crutzen@mpic.de

Matt Edgeworth
Honorary Research Fellow, School of Archaeology and Ancient History,
University Road, Leicester, UK
e-mail: me87@le.ac.uk

Erle Ellis
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

Mike Ellis
British Geological Survey, Keyworth, Nottingham NG12 5GG, UK
e-mail: mich3@bgs.ac.uk

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

Agnieszka Gałuszka
Institute of Chemistry, Jan Kochanowski University
15G Świętokrzyska St, 25-406 Kielce, Poland
e-mail: aggie@ujk.edu.pl

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

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

Peter Haff
Nicholas School of the Environment, Duke University
Grainger Hall, 9 Circuit Drive, Durham NC 27710 USA
e-mail: pkhaff@gmail.com

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

Martin Head

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

Juliana Assunção Ivar do Sul
Leibniz Institute for Baltic Sea Research Warnemüende (IOW)
Biological Oceanography Section Seestrasse 15, 18119 Rostock, Germany
e-mail: juliana.ivardosul@io-warnemuende.de

Catherine Jeandel
LEGOS (CNRS/CNES/IRD/Université Paul Sabatier), 14 avenue Edouard Belin, 31400 Toulouse, France.
e-mail: catherine.jeandel@legos.obs-mip.fr

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

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

Cath Neal
Department of Archaeology, University of York,
King's Manor, York YO1 7EP, UK
e-mail: cath.neal@york.ac.uk

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

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

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

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

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

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

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

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

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

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

Michael Wagreich
Department of Geodynamics and Sedimentology Center for Earth Sciences, University of Vienna Althanstrasse 14, A-1090 Vienna, Austria
e-mail: michael.wagreich@univie.ac.at

Colin Waters (Secretary)
School of Geography, Geology and the Environment, University of Leicester, University Road, Leicester LE1 7RH, UK
e-mail: cw398@le.ac.uk

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

Scott Wing

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

Alex Wolfe
Department of Biological Sciences
University of Alberta, Edmonton AB T6G 2E9, Canada
e-mail: awolfe@ualberta.ca
Jan Zalasiewicz (Chair)
School of Geography, Geology and the Environment, University of Leicester, University Road, Leicester LE1 7RH, UK
e-mail: jaz1@le.ac.uk

An Zhisheng (Xi'an)
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

ANTHROPOCENE WORKING GROUP: PROGRAMME FOR 2019

- Consolidate work on potential GSSP site assessments with support from HKW project funding.
- AWG to hold vote on interim definition of Anthropocene and communicate result to SQS so that they can hold a binding test vote. The ICS and SQS may be open to interim proposals for an Anthropocene epoch if sufficient evidence is compiled soon.
- Arrange next AWG meeting to be held in New Orleans, 7-8th November, to be followed by the Anthropocene River Campus.
- Review composition of the AWG membership to incorporate new members with specialisms not currently covered by the group that are necessary for analysing proxy markers and remove non-active members.
- Pursue work on analysing and articulating the utility of the Anthropocene as a formal part of the International Chronostratigraphic Chart.
- Finalize ideas about best strategy for initial communication to SQS and ICS; potential involvement of members of both bodies in future AWG meetings.
- Aim to convene multidisciplinary and transdisciplinary session on the Anthropocene at EGU2019 (8-12th April). Michael Wagreich coordinating the University of Vienna interdisciplinary workshop (Anthropocene - challenging the disciplines) on 8th April.
- Aim to present on progress to Strati2019 in Milan (2-5th July)

Jan Zalasiewicz (Chair)

Colin Waters (Secretary)

December 2018