Newsletter of the Anthropocene Working Group

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Table of Contents

Newsletter edited by Colin Waters and Jan Zalasiewicz.

Thanks to all colleagues who contributed to this Newsletter.

Cover Illustration: Attendees at the Anthropocene Working Group meeting held in Oslo, 22-23 April 2016, hosted by the Fridtjof Nansen Institute.

CHAIRMAN'S COLUMN

Dear all,

This has been something of a transition interval for the AWG - negotiated, we hope, reasonably successfully. The end of one era for the AWG – if one may put it that way – came with the International Geological Congress at Cape Town in August 2016, where Colin Waters presented our main preliminary findings and interim recommendations (the adjectives are necessary in both instances, given that this is work in progress) that have emerged from our collective work since 2009 (and recently published in the journal *Anthropocene*). Thus on the basis of the evidence considered so far, and by large majority, we suggest that the Anthropocene possesses geological reality; that it is best considered at epoch/series level (which, if agreed and ratified, would mean that the Holocene has terminated); that it is best defined beginning in the mid-20th century with the 'Great Acceleration' (and thus is not the beginning of detectable or even significant anthropogenic influence); that it should be defined by a GSSP ('golden spike') rather than a GSSA; and that – as a consequence – we should proceed towards building a formal proposal to forward for consideration, initially, to the Subcommission of Quaternary Stratigraphy. Our recommendations are more divided over the primary signal that should be used to define the Anthropocene –a reflection of the many possible signals that could be used – but for the moment the relatively sharp and globally distributed signature of the nuclear 'bomb spike', whether plutonium or the 'extra' radiocarbon, seems the most promising candidate. The sum total of evidence to date, dispersed in the many papers that we and others have published, is being collected into the single volume to be published by Cambridge University Press.

The work still to do is substantial. There are very many potential locations for a 'golden spike' around the world – and a great number of combinations of stratigraphical signals to be considered. However, this new phase of work has begun, by means of a substantial manuscript to be published next year, comparing the pros and cons of sedimentary environments within which a GSSP might be located. This should help narrow the ground to be searched, over the next few years, for more specific GSSP candidate locations. The work will need rather more resources than we have been used to operating with in the past; we have begun the task of trying to secure these, and hopefully will have enough success here to help speed the work.

We will, at the same time, continue considering the Anthropocene from a wider perspective, not least as regards the utility and significance of its potential formalization for the Earth sciences and also for wider fields of study. We will keep engaging, too, with our many colleagues beyond the AWG, whose work has been so helpful to advancing study of the Anthropocene. It just remains to thank you all for your many contributions over this time – and for the wonderful and collegiate spirit in which those contributions have been made – and to look forward to the work to come.

With best wishes to all

Jan Zalasiewicz

THIRD ANTHROPOCENE WORKING GROUP MEETING

The third meeting of the AWG, coordinated by Davor Vidas, was held in Oslo on 22nd–23rd April 2016, kindly hosted and financially supported by the Fridtjof Nansen Institute (FNI) and Research Council of Norway. This AWG meeting, with Martin Head (current Chair of SQS) and Felix Gradstein (former Chair of ICS) as invited speakers and attendees, focussed on a consensus statement for IGC2016, notably key signals and potential environments which could host a GSSP. Also debated were key arguments against formalisation, scientific utility of the Anthropocene, and progress on the CUP book was reviewed.


AWG discussions in the wonderful surroundings of the Fridtjof Nansen Institute continued into the evening.

This is a brief summary of the event.

Friday, 22 April 2016
(meeting held at the FNI)

Session 1: Introductions and ICS business

- Introductions and outline of scope of meeting (J Zalasiewicz/C Waters).
- SQS presentation by Martin Head.
- Perspective on ICS protocols by Felix Gradstein.

Session 2: Key arguments against formalisation

- Summary of key arguments against formalisation (J Zalasiewicz/C Waters).
- Discussion on 'scientific utility' and 'societal (political) relevance' of the Anthropocene (D Vidas).

Session 3: Review of progress of CUP book

- Introductory Section (J Zalasiewicz)
- Lithologies (J Zalasiewicz)
- Terrestrial sediments (C Waters)
- Marine sediments (J Zalasiewicz)

Session 4: Review of progress of CUP book

- Biostratigraphy (M Williams)
- Chemostratigraphy (J Zalasiewicz)
- Climate Change (C. Summerhayes)

Saturday, 23 April 2016

meeting held at the Scandic Fornebu Hotel

Session 5: IGC2016 consensus statement

- Status of Anthropocene (J Zalasiewicz)
- Rank of Anthropocene (C Waters).
- Start of Anthropocene (C Waters).

Session 6: GSSP candidates; suitability of signals and availability of existing data (all to consider presenting one example)

- GSSA .v. GSSP option (J Zalasiewicz).
- Examples from marine anoxic basins. a) Santa Barbara (C. Waters)
- Examples from coastal facies a) Gorrondatxe-Tunelboca geosite-Basque region (A. Cearreta).

Session 7: GSSP candidates (continued)

- Examples from lake environments and peat bogs (J Zalasiewicz & C Waters).
- Examples from glacial ice. (C. Summerhayes)
- Examples from speleothems a) Ernesto Cave (I Fairchild).
- Tree rings (J Zalasiewicz).
- Anthropogenic strata and materials. a) Urban deposits in Vienna and landfills (M Edgeworth); b) Metropolitan Line (M Williams)

Session 8: Closing session: meeting conclusions

How do we practically manage the programme of work for 2016 and beyond? (J Zalasiewicz)

Additional meetings:

- Meeting at the Max Planck Institute (MPI) for Chemistry in Mainz (Germany), hosted by Paul Crutzen on 16th March 2017, with participation of AWG members from University of Leicester (Jan Zalasiewicz, Colin Waters and Mark Williams) and those based in Germany (Paul Crutzen and Reinhold Leinfelder) and Norway (Davor Vidas) along with interested parties the MPI Chemistry (Ulrich Pöschl, Jos Lelieveld, Susanne Benner, Bettina Weber and Astrid Kaltenbach), MPI for the History of Science, Berlin (Jürgen Renn), Haus der Kulturen der Welt(HKW), Berlin (Bernd Scherer and Christoph Rosol) and IASS in Potsdam (Mark Lawrence and Franz Mauelshagen) to discuss future funding initiatives. In a follow up of this meeting, a project proposal was submitted to the Belmont Forum, which included a costed programme of multi-proxy analysis of candidate GSSP localities, but was eventually unsuccessful on the ground of formal aspects (eligibility).

Meeting at the Max Plank Institute for Chemistry in Mainz provided an opportunity to discuss future initiatives and for distinguished members of the group to catch up on news.

SELECTED PUBLICATIONS

The key work over the course of 2016–17 has been the preparation of the manuscript for the book **The Anthropocene as a geological time unit: an analysis**. Compiled by the editors: Jan Zalasiewicz, Colin Waters, Mark Williams and Colin Summerhayes, it was submitted to Cambridge University Press, initially at the end of August and revised and resubmitted in October 2017.

Chapters and sub-chapters

1. History and development of the Anthropocene as a stratigraphical concept

1.1. A general introduction to the Anthropocene: [Jan Zalasiewicz, Colin Waters, Mark Williams, Colin Summerhayes, Martin Head, Reinhold Leinfelder]

1.2. History of the Anthropocene concept: [Jacques Grinevald, John McNeill, Naomi Oreskes, Will Steffen, Colin Summerhayes, Jan Zalasiewicz]

1.3. Stratigraphy and the Geological Time Scale: [Jan Zalasiewicz, Colin Summerhayes, Martin Head, Scott Wing, Phil Gibbard and Colin Waters]

1.4. The utility of formalization of the Anthropocene for science: [Davor Vidas, Jan Zalasiewicz, Will Steffen, Trevor Hancock, Anthony Barnosky, Colin Summerhayes, Colin Waters]

2. Stratigraphic signatures of the Anthropocene

2.1. Rock components - synthetic mineral-like compounds: [Bob Hazen and Jan Zalasiewicz]

2.2. Anthropogenic rock types: [Colin Waters and Andy Smith**]**

2.3 Novel materials as particulates: **[**Neil Rose and Agnieszka Galuszka**]**

2.4 Black carbon and primary organic carbon from combustion: [Colin Waters and An Zhisheng]

2.5 Artificial ground, or ground modified by humans: [Colin Waters, Simon Price and Jan Zalasiewicz**]**

2.6 Magnetostratigraphy: [Colin Waters]

2.7 A pedology and pedostratigraphy for the Anthropocene: [Daniel deB Richter, Sharon A Billings, Colin N. Waters]

2.8 Changes to Holocene/Anthropocene patterns of sedimentation from terrestrial to marine: [James Syvitski, Jan Zalasiewicz and Colin Summerhayes]

3. The Biostratigraphical signature of the Anthropocene

3.1 Fossils as markers of geological boundaries: [Mark Williams, Anthony Barnosky, Jan Zalasiewicz, Martin Head, Ian Wilkinson]

3.2 Late Quaternary extinctions: [Anthony Barnosky, Ian Wilkinson, Jan Zalasiewicz, Mark Williams]

3.3 The biostratigraphical signal of the neobiota: [Mark Williams, Jan Zalasiewicz, David Aldridge, Colin Waters, Valentin Bault, Martin Head, Anthony Barnosky]

3.4 Using the state of reefs for Anthropocene stratigraphy: an ecostratigraphic approach: [Reinhold Leinfelder]

4 The Technosphere and its physical stratigraphical record

4.1 The technosphere and its relation to the Anthropocene: [Peter Haff]

4.2 Technofossil stratigraphy:- [Jan Zalasiewicz, Colin Waters, Mark Williams, Anthony Barnosky]

4.3 The stratigraphy of plastics and their preservation in geological records:-[Reinhold Leinfelder and Juliana Ivar do Sul]

5. Anthropocene chemostratigraphy

5.1 Capture of geochemical changes in archives: [Ian Fairchild, Jan Zalasiewicz, Colin Summerhayes, Colin Waters]

5.2 Carbon: [Jan Zalasiewicz and Colin Waters]

5.3 Boron isotopes as a proxy for oceanic pH: [Colin Waters, Jan Zalasiewicz, Reinhold Leinfelder and Colin Summerhayes]

5.4 Nitrogen and phosphorus: [Jan Zalasiewicz]

5.5 Sulphur: [Ian Fairchild]

5.6 Metals: [Agnieszka Galuszka and Michael Wagreich]

5.7 Organic compounds: [Agnieszka Galuszka and Neil Rose]

5.8 Artificial radionuclide fallout signals: [Colin Waters, Irka Hajdas, Catherine Jeandel and Jan Zalasiewicz]

6. Climate change and the Anthropocene

6.1 Climate: [Colin Summerhayes]

6.2 Ice: [Colin Summerhayes]

6.3 Sea Level: [Alejandro Cearreta**]**

7. The stratigraphical boundary of the Anthropocene

7.1 Geological validity of the Anthropocene: [Jan Zalasiewicz, Colin Waters, Mark Williams and Colin Summerhayes]

7.2. The early stratigraphical record of humans: [Mark Williams and Eric Odada]

7.3 Pre-Industrial Revolution start dates for the Anthropocene: [Michael Wagreich, Mark Williams, Erich Draganits, Jan Zalasiewicz, Colin Waters, Matt Edgeworth]

7.4 The Industrial Revolution and the Anthropocene: [J.R. McNeill]

7.5 Mid-20th century 'Great Acceleration': [Will Steffen]

7.6 Current and projected trends: [Will Steffen]

7.7 Hierarchy of the Anthropocene: [Colin Waters, Jan Zalasiewicz, Martin Head]

7.8 Potential GSSP/GSSA levels: [Colin Waters]

7.9 Epilogue and forward look for the Anthropocene: [Jan Zalasiewicz, Colin Waters, Mark Williams, Colin Summerhayes and Martin Head]

Bibliography

Another significant contribution on Anthropocene science is the **Encyclopedia of the Anthropocene: Reference Module in Earth Systems and Environmental Sciences**. Elsevier Science, Amsterdam. The following contributions were provided by members of the AWG:

Edgeworth, M. 2017. Humanly Modified Ground.

Fairchild, I.J. 2017 Geochemical records in Speleothems.

Gałuszka, A. and Migaszewski, Z.M. 2017. Chemical signals of the Anthropocene

Han, Y.M., An, Z.S. and Cao, J.J. 2017. The Anthropocene—A potential stratigraphic definition based on black carbon, char, and soot records. DOI:10.1016/B978-0-12-409548-9.10001-6

Ludwig, C., Steffen, W. (in press). The 1950s as the beginning of the Anthropocene.

Waters, C.N. and Zalasiewicz, J. (in press). Concrete: the most abundant novel rock type of the Anthropocene.

Zalasiewicz, J. and Waters, C. N. in press. Arguments for an official Global Boundary Stratotype Section and Point for the Anthropocene.

Moreover, in November 2017 a new popular science book series – *the Anthropocene* – was launched by Skolska knjiga, a leading academic publishing house in Croatia. Davor Vidas serves as the scientific editor-in-chief for this book series, and the first book published is a Croatian language translation of *The Earth After Us* by Jan Zalasiewicz.

The Working Group has published over 2016-17, or has in press the following:

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Zalasiewicz, J, Williams, M, Waters, C N., Barnosky, A.D. and Haff, P. (in press). Anthropocene. Origins. (Dunedin Press).

Zalasiewicz, J., Waters, C., Williams, M. (in press) "Les strates de la ville de l'Anthropocène". Annales.

Zalasiewicz, J, Steffen, W, Leinfelder, R, Williams, M, Waters, C. 2017. Petrifying Earth Process: The Stratigraphic Imprint of Key Earth System Parameters in the Anthropocene. Theory Culture & Society, Special Issue: Geosocial Formations and the Anthropocene. Clark, N. & Yusoff, K. (Editors), 34(2-3), 83-104.

Zalasiewicz, J., Williams, M., Smith, D.M. 2017. An Anthropocene landscape: drainage transformed in the English Fenland. In Kelly, J., Scarpino, P., Berry, H., Syvitski, J. & Meybeck, M. (eds). Rivers of the Anthropocene. University of California Press.

Zalasiewicz, J, and Waters, C N. 2016. Geology and the Anthropocene. Antiquity, 90 (350), 512-514.

Zalasiewicz, J, Williams, M, and Waters, C N. 2016. Anthropocene. 14-16 in Keywords in the Study of Environment and Culture. Adamson, J, Gleason, W A., and Pellow, D N. (editors). (NYU Press).

Zalasiewicz, J. 2016. The extraordinary strata of the Anthropocene. Chapter 6 in: (Opperman, S. & Iovino, S., eds) *Environmental Humanities: Voices from the Anthropocene*. Rowman & Littlefield.

CONFERENCES/LECTURES

International Geological Congress (IGC), Cape Town (29th August – 2nd September 2016): Three presentations on Anthropocene by AWG members, including:

- Keynote presentation by **Colin Waters** which outlined AWG consensus statement based upon a vote held before the meeting;
- Forward look presented by **Colin Waters** on GSSP appraisal;
- Evidence of a pre-Industrial Revolution metal smelting signal presented by **Michael Wagreich**.

Other specific presentations:

Agnieszka Gałuszka:

- Saturday 15th October speech at "Man of the Anthropocene" organized by the Wroclaw Research Centre EIT+. The titles of other presentations included: "Monsters of the Capitalocene: Zombies and 'cheap nature'", "Transition or Apocalypse? Knowledge and challenge of Anthropocene".

Martin Head:

- presented on "The Geologic Anthropocene: Analysis and Current Status" at the GSA2017 meeting on 19th March 2017.

Catherine Jeandel:

- Friday 1st December, MNHN Paris, Quels indicateurs de l'Anthropocène? débat sur le "clou d'or"

Reinhold Leinfelder:

- 18- Jan 2016: Berlin im Anthropozän. Lecture on occasion of New Year's Celebration of Berlin Senate for City Development and Environment , Senatsverwaltung, SU, Berlin
- Willkommen im Anthropozän! Zukunftskonzepte vermitteln. Keynote Conference : Education for Sustainability in Times of Great Challenges:, DBU-Forum Umweltbildung. Umweltzentrum der Deutschen Bundesstiftung Umwelt, Osnabrück., 19. Jan. 2016
- 29 Jan 2016: Zukunft? Zukünfte! Kreativität und Offenheit als maßgebliche Zukunftsgestalter. Conference on occasion of 60th anniversary of Dramaturgischen Gesellschaft: "was tun. politisches handeln jetzt", Deutsches Theater und Heinrich-Böll-Stiftung, 29.1.2016
- Zukunft? Zukünfte! Das Anthropozän gemeinsam gestalten. Keynote, European School Parliament, Gesamtschule Friedenstal, Herford, 19. Feb. 2016
- Keynote: Blick zurück aus der Zukunft? Conference on Future of Environmental Politics , Forschungszentrum für Umweltpolitik (FFU), Freie Universität Berlin. 26. April 2016
- 2. May 2016: Welterbe Ozean. Introductory Keynote for the Colloqium Fundamentale-Series „Mensch und Meer: Zwischen Nutzen und Ausbeutung“ for Science Year 2016*17. Centre for Applied Cultural Studies (ZAK) at KarlsruherInstitute of Technology (KIT).
- Willkommen im Anthropozän. Global Goals Curriculum. Converence on the future of learning, 4. - 6. May 2016, Berlin.
- 3 June 2016: Anthropozän – Die Zukunft im Erdzeitalter des Menschen. Night of Ideas at Institut Français, Berlin.
- 7 / 8 June 2016: Die Anthropozän-Küche. at Environmental Week, Garden of Schloss Bellevue, (Residence of the German Federal President), Berlin.
- Keynote: Das Zeitalter des Anthropozän und die Notwendigkeit der großen Transformation. Cnference on Environmental Laws. Landesvertretung der Freien Hansestadt Bremen in Berlin. 4. Nov 2016
- 26. Nov 2016: Keynote: Vom Parasitismus zur Symbiose. Verantwortung für das Anthropozän übernehmen. Annual Meeting of members of the German Circle for the Environment (Deutscher Naturschutzring), Berlin.
- Verantwortung für das Anthropozän übernehmen - die Rolle der Wissenschaften. Free Science - Wissenschaft zwischen Goethe und Kommerz, Symposium oft he Global Young Faculty, Ruhr Universität Bochum, 27. Jan 2017
- 15. Feb 2017: Technofossilien überall. Was werden Geologen in den Sedimenten der Erde finden, wenn sie in einigen Tausend Jahren Bohrkerne ziehen? . Talks and Discussion round "Welche Zukunft wollen wir?" at Staatlichen Museum für Naturkunde, Schloss Rosenstein (in Koop. with Science Journal Bild der Wissenschaft)
- Everything is connected to everything -- Responsible research and Innovation for the Anthropocene, Workshop "Managing Responsibility of Research at Universities", Symposium University Alliance for Sustainability, Spring Campus, "Societal Transformation to Sustainability: Universities as Pacesetters?", Freie Universität Berlin. 28. March 2017.
- Planetary Boundaries in Science Communication. Workshop #6 "Public understanding of the planetary boundaries. Experiences and challenges for communicators and educators", International Conference "Making the Planetary Boundaries Concept Work", Berlin, 24 April 2017
- Die Umwelt im Anthropozän. Deutschland weiter denken. D2030 Die Zukunftskonferenz, Colonia Nova, Berlin. 6 July 2017

- 22 July 2017: Das Zeitalter des Anthropozän und die Notwendigkeit einer großen Transformation. Wartaweil Talks, BUND (German Federation on Environment and Nature Protection), Wartaweil, Herrsching.
- Keynote: Die Zukunft im Anthropozän gestalten - Herausforderungen und Chancen für einen integrativen Ansatz. E BfN-Zukunftsworkshop 2017 "Vordenken - Mehr Naturschutz in der Gesellschaft, Bundesamt für Naturschutz (Federal Agency for Environmental Protection), Bonn. 4 Sep 2017:
- Monitoring and assisting coral reefs in the Anthropocene. Session 5.2. Tropical coral archives, Geobremen 2017 Geosciences Conference "The System Earth and its Materials - from Seafloor to Summit, Univ. Bremen. > abstract 27 Sep 2017
- 9 Nov 2017: Unsere Zeit gestalten. Impulsvortrag und Y-table-Talk. Reihe "wir müssen reden", FieldStations e.V. und DAZ. German Centre for Architecture, Berlin
- Keynote: "Die Erde wie eine Stiftung behandeln" - Ressourcenschutz und Rohstoffeffizienz im Anthropozän. 3. Kongress "Phosphor - ein kritischer Rohstoff mit Zukunft" (DWA/Ministerium f. Umwelt, Klima u. Energiewirtschaft BW), Kursaal Stuttgart Bad Cannstatt., 22 Nov 2017.
- "Die Erde wie eine Stiftung behandeln" - Nachhaltigkeitsbildung im Anthropozän. Fachtagung MINT-Nachhaltigkeitsbildung (Lernort Labor, in Koop. mit DBU), DBU Zentrum für Umweltkommunikation, Osnabrück, 24 Nov 2017.

Will Steffen:

- 27-29 January 2016, Health and the Environment in the Western Pacific, World Health Organization, Manila, Philippines: “The Anthropocene: Where on Earth are We Going?”
- 10 February 2016, Australian Meteorological and Oceanographic Society (AMOS) conference, Melbourne: “The Anthropocene: Humanity Meets the Earth System”
- 7 March 2016, Cambridge Institute for Sustainability Leadership, Business Sustainability Programme, Melbourne, Australia: lecture on Anthropocene.
- 7 September 2016, invited lecture at Flinders University, Adelaide, South Australia: “The Anthropocene: Where on Earth are We Going?”
- 20 October 2016, invited lecture, Stockholm Resilience Centre: “The Anthropocene: Where on Earth are we going?
- 5 December 2016, Qatar University Life Sciences Symposium, Doha, Qatar: “The Anthropocene: Where on Earth are We Going?”
- 10 February 2017, Australian Meteorological and Oceanographic Society (AMOS) conference, Canberra: “Addressing the Anthropocene Hypothesis: Are We There Yet?”
- 31 March 2017, Annual Meeting of the Royal Swedish Academy of Sciences, Concert Hall, Stockholm: “The Anthropocene, Climate Change & Sustainability: Where on Earth are We Going?”
- 23 May 2017, Symposium on the Anthropocene Paradox, University of Technology-Sydney, “The Anthropocene Paradox: Surviving the Age of Humans?”
- 13 June 2017, Centre for Collective Action Research, Gothenburg University, Sweden: “Navigating the Anthropocene: The Ultimate Challenge for Collective Action”
- 9 August 2017, Australia-New Zealand Emergency Management Conference, Canberra: “Climate Change and the Anthropocene: Where on Earth are We Going?”
- 5 September 2017, Australian National University, Canberra: “Communicating climate change in the post-truth Anthropocene”
- 21 September 2017, Keynote presentation at IUFRO (International Union of Forestry Research Organizations) Congress, Freiburg, Germany: “The Earth System, the Anthropocene, and the World’s Forests”
- 26 October 2017, public lecture at Victoria University of Wellington, New Zealand: “The Anthropocene: Challenges of the Human Age”

- 27 November 2017, public lecture at Environmental Change Institute, Oxford University, UK: "The Anthropocene: Where is the Earth System Going?"

Davor Vidas:

- Roundtable discussion with presentation on international law implications of the Anthropocene, at the closing of the International Workshop on 'Territory, Law and the Anthropocene' at the University of Warwick, Department of Politics and International Studies, Warwick, UK, on 1 December 2017;
- Invited Lecture on 'The Law of the Sea for a New Epoch?', at the International Exhibition Event on *Fishing for Islands*, organized by TBA21-Academy at the Hamburger Bahnhof Museum, Berlin, Germany, 28 October 2017, available at: https://drive.google.com/drive/folders/0B6gdz1ePE7hbZU52dEkybGhNdk0
- Invited Lecture on 'The Anthropocene: The New Meaning of Stability and Change under International Law', at the International Seminar on *Governance and Planetary Crisis: Challenges and Agendas for Human Ecology*, at the University of Kent, School of Anthropology and Conservation, Canterbury, UK, 2 June 2017;
- Invited Key Note on 'Marine Biodiversity beyond Areas under National Jurisdiction: An Anthropocene Context', at the Opening of *International Workshop on Marine Biodiversity of Areas Beyond National Jurisdiction*, at the Diplomatic Institute of the Ministry of Foreign Affairs of Portugal, Lisbon, Portugal, 2 March 2017;
- Invited Lecture on 'The Anthropocene and International Law: The New Meaning of Change', *The Third Anthropocene Lecture* in the public lecture series organized by the Institute for Advanced Sustainability Studies (IASS), Potsdam, Germany, 29 November 2016;
- Invited Key Note on 'A Committee on Holocene Stability and a Committee on Anthropocene Change: Study of the Law of the Sea by the ILA Committees on Baselines and on Sea-Level Rise', at the 95th Annual Conference of the American Branch of the International Law Association, on *International Law 5.0*, Fordham University School of Law, New York, USA, 29 October 2016;
- Invited presentation on 'Oceans in Globalization: Law of the Sea from *Mare liberum* to the Anthropocene', at the international seminar *The Forgotten Space*, organised by TBA21 Foundation (Vienna, Austria) at island Lopud, Dubrovnik, Croatia, 9 September 2016;
- Invited key-note on 'The Anthropocene and the Law of the Sea', in the panel on *Marine Biodiversity Beyond Areas of National Jurisdiction*, at the 77th International Law Association (ILA) Biennial Conference, Johannesburg, South Africa, 10 August 2016;
- Invited presentation on 'Sea-level Rise: A Challenge for International Law in the Anthropocene' (with D. Freestone), at the *1st IUCN World Environmental Law Congress*, Rio de Janiero, Brazil, 27–30 April 2016. The Anthropocene was addresses in several panels at the congress.

Michael Wagreich:

- presented at Globaler Wandel (Global Understanding), International Year of Global Understanding 10th October 2016 Vienna.
- presented on " The Anthropocene - Pop culture in the Geological Time Scale?" at the Austrian Geological Society Lecture Series, 9th March 2017, Salzburg.
- presented on " Events in Earth history: The K/Pg impact versus the Anthropocene" at the 10th INternational Symposium on the Cretaceous, 28th August 2017, Vienna.
- Anthropocene Workshop at the Earth Science Colloquium, 16th November 2017, Vienna.
- took part in the workshop on "The Anthropocene and the Humanities", Department for German Studies, University of Vienna, 19th - 20th September 2017, Vienna.

- presented at the Center for Environmental History (ZUG) on "The Anthropocene - a new (geological) Epoch?", 4th December 2017, Vienna.

Colin Waters:

- presented at the 2nd International Microorganism Conference, Muséum National d'Histoire Naturelle, Paris: 9th June 2016.
- Keynote at Quaternary Research Association PG Symposium, Keyworth, 14th September 2016.
- Keynote at NERC Doctoral Training Programme conference, Liverpool on 18th July 2017
- Spoke on the Anthropocene at a conference to mark the first public day of the Folkestone Triennial Festival on Saturday 2nd September 2017. The Folkestone Triennial is a festival of newly commissioned public art by international artists and architects, some examples of which remains in Folkestone after the end of each festival to add to the town's collection of permanent artworks. Around 20 artists are commissioned each edition. The list of artists for 2017 has been made available on the website already: http://www.folkestonetriennial.org.uk/artists/2017/
- Presented at Urban Landscape Week 2017 "[No] further towards the edge of the Anthropocene. TUDelft School of Architecture.
- Presented talk at Geo-East symposium "The Ice (and after) in the Eastern Counties on 18th November 2017, Cambridge.
- Presented at Leicester Literary and Philosophical Society meeting 29th November 2017.

AWARDS

Naomi Oreskes received the Stephen H. Schneider Award 2016 for Outstanding Climate Science Communication on 15th December 2016.

The Fridtjof Nansen Institute (FNI) won on 10 July 2017 the *Prospect Think Tank Award 2017* as the Best European Think Tank in the field of Energy and Environment, especially for its work on the Arctic, the Anthropocene, and interdisciplinary approaches. For FNI press release on the award, see: https://www.fni.no/news/fni-wins-prize-best-european-think-tank-on-energy-and-environment-article1448-330.html

An interview that Davor Vidas gave about the Anthropocene to a leading Croatian daily, Vecernji list (published 1 October 2016) won a prize at the European Newspaper Award 2016 (18th competition) - in the category of Alternative Storytelling. More about the European Newspaper Award is here:

http://www.editorial-design.com/17/PDFs/18._ENA_List_of_Winners.pdf

The article from Vecernji list is listed under Alternative Storytelling as follows: "Vecernji list, HR, Geologija, 1. October 2016, page 28-29: one Award".

MEDIA

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

Alejandro Cearreta (after IGC):

-La Razón newspaper (Spain), 7th September 2016, http://www.la-razon.com/sociedad/Ciencia_tecnologia/Tierra-Antropoceno-epoca-geologica-cientificos_0_2559943993.html

-La Vanguardia newspaper (Spain), 7th September 2016, http://www.lavanguardia.com/vida/20160907/41155112712/antropoceno-la-nueva-epoca-geologica-que-cobra-fuerza-entre-los-cientificos.html

-El País newspaper (Spain), 8th & 13th September, http://elpais.com/elpais/2016/09/05/ciencia/1473092509_973513.html (Spanish version)

http://elpais.com/elpais/2016/09/09/ciencia/1473431049_752159.html (Spanish version)

http://elpais.com/elpais/2016/09/12/inenglish/1473683883_859025.html (English version)

-EiTB digital newspaper (Spain), 8th September 2016, http://www.eitb.eus/es/noticias/sociedad/detalle/4367532/sedimentos-urdaibai-confirman-estamos-antropoceno/

-The Huffington Post (Spain), 12th Septemeber 2016, http://www.huffingtonpost.es/2016/09/11/antropoceno-humanos-era_n_11937426.html

-Mundiario (Spain) 12th September 2016, http://www.mundiario.com/articulo/sociedad/ultimo-antropoceno-negacionismoseducativos-anticuados/20160912215958067620.html

-El País newspaper (Uruguay), 15th September 2016, http://www.elpais.com.uy/vida-actual/nueva-terrestre-medio-ambiente-impacto.html

-A radio service broadcast by the Spanish National Radio RNE, programme “Esto me suena. Las tardes del ciudadano García”, 8th September 2016, http://www.rtve.es/alacarta/audios/esto-me-suena-las-tardes-del-ciudadano-garcia/esto-suena-tardes-del-ciudadano-garcia-segunda-hora-08-09-16/3714067/ .

-A radio service broadcast by the Cadena Ser, programme “La Ventana”, 8th September 2016, http://play.cadenaser.com/audio/001RD010000004266723//

-A radio service broadcast by the Basque Public Radio Euskadi, programme “Boulevard”, 9th September 2016, http://www.eitb.eus/es/radio/radio-euskadi/programas/boulevard/detalle/4369500/antropoceno-nueva-etapa-geologica-provocada-accion-humana/

-A radio service broadcast by the Aragon Public Radio, programme “Boulevard”, 10th September 2016, http://www.aragonradio.es/radio?reproducir=146301

-A television service broadcast by the Basque Public Television ETB, programme”Teleberri”, 9th September 2016, http://www.eitb.tv/es/video/teleberri--noche/4104874154001/108105/09-09-2016/

-A television service broadcast by the Spanish Cuatro Channel, programme”Noticias Cuatro”, 11th September 2016, http://www.cuatro.com/noticias-cuatro/en-directo/noticias-cuatro-fds/Noticias_Cuatro_Fin_de_Semana-Roberto_Arce_2_2242305111.html

-A television service broadcast by the Spanish Public Television TVE1, programme”Telediario2”, 14th September 2016, http://www.rtve.es/alacarta/videos/telediario/telediario-21-horas-14-09-16/3721134/

-Consumer magazine (Spain), 17 March 2017, http://www.consumer.es/web/es/medio_ambiente/naturaleza/2017/03/17/225102.php

-Estratos magazine (Spain), issue 118, summer 2017, http://www.enresa.es/esp/inicio/conozca-enresa/publicaciones/category/1-revista-estratos

-Viernes magazine (Chile), 22 September 2017, http://impresa.lasegunda.com/2017/09/22/V

-A television service broadcast by the Spanish Public Television TVE2, programme "El Cazador de Cerebros", 24 October 2017, http://www.rtve.es/alacarta/videos/el-cazador-de-cerebros/cazador-cerebros-extincion-salvacion/4269398/

Matt Edgeworth:

online article by Stephen Graham https://placesjournal.org/article/city-ground/

Ian Fairchild:

BBC World interview on the Anthropocene 1st March 2016 https://www.youtube.com/watch?v=HEXjQ4fevVk&feature=youtu.be

Juliana Ivar do Sul:

Museu do Amanhã (http://www.museudoamanha.org.br/en) part of a collective interview about the Anthropocene on 2nd September 2016 involving live interview with two researchers in Brazil and South Africa. http://museudoamanha.org.br/en/content/%E2%80%98it%E2%80%99s-been-70-years-we-entered-anthropocene%E2%80%9D-british-scientist-says or in Portuguese http://museudoamanha.org.br/pt-br/entrevista-colin-waters

Catherine Jeandel:

Participated along with Patrick de Wever and JD Vignein the famous broadcast "tete au Carre" France Inter, the main French public radio , at 2 pm 30th November 2017

Reinhold Leinfelder:

Media reports on the Technosphere paper in the Frankfurter Allgemeine Zeitung and the Märkische Oderzeitung.

-7./11. Dec. 2016, Frankfurter Allgemeine Zeitung (print),Natur und Wissenschaft bzw. faz-online (11.dec 2016) Übergewicht in der "Technosphäre" (print digi via blendle €, frei via http://www.faz.net/aktuell/wissen/erde-klima/die-technosphaere-der-erde-14560715.html

-10. Dec. 2016: Märkische Oderzeitung (print), S. 2.: Nachgeforscht: Leben auf dem Mont Klamott - Wie der Mensch mit seiner Wirtschaft die Welt umkrempelt (since 12. Dec also online via http://www.moz.de/artikel-ansicht/dg/0/1/1537051/)

-11. Dec. 2016: DIE WELT (online): So viel wiegt alles, das wir Menschen je gebaut haben: https://www.welt.de/kmpkt/article160159442/So-viel-wiegt-alles-das-wir-Menschen-je-gebaut-haben.html

-8. Dec. 2016: Wired (Germany): Wieviel wiegt alles, was der Mensch jemals gebaut hat? https://www.wired.de/collection/science/wie-viel-wiegt-alles-was-der-mensch-jemals-gebaut-hat

-2. Dec. 2016, Scilogs-Spektrum: 30 Billionen Tonnen Technik: Ausmaß und Diversität der Technosphäre http://scilogs.spektrum.de/der-anthropozaeniker/30-billionen-tonnen-technik/ . Siehe auch Scinexx, Technosphäre der Erde wiegt 30 Billionen Tonnen

-1. Dec. 2016: Scinexx: Technosphäre der Erde wiegt 30 Billionen Tonnen: http://www.scinexx.de/wissen-aktuell-20897-2016-12-01.html , (based on Univ. Leicester Press release)

online, dpa based (German Press Agency), short news, examples:

-Berliner Morgenpost: http://www.morgenpost.de/vermischtes/article208838509/Masse-menschengemachter-Dinge-wiegt-30-Billionen-Tonnen.html

-Berliner Zeitung: http://www.berliner-zeitung.de/politik/masse-menschengemachter-dinge-wiegt-30-billionen-tonnen-25200406

-Frankfurter Rundschau: http://www.fr-online.de/politik/masse-menschengemachter-dinge-wiegt-30-billionen-tonnen,26577298,34979368.html

-Hamburger Abendblatt: http://www.abendblatt.de/nachrichten/article208853469/Masse-menschengemachter-Dinge-wiegt-30-Billionen-Tonnen.html

-Kölnische Rundschau: http://www.rundschau-online.de/politik/masse-menschengemachter-dinge-wiegt-30-billionen-tonnen-25200406

-Mitteldeutsche Zeitung: http://www.mz-web.de/politik/masse-menschengemachter-dinge-wiegt-30-billionen-tonnen-25200406

-MDR: http://www.mdr.de/wissen/umwelt/technosphaere-100.html

-Stern: http://www.stern.de/panorama/-technosphaere--masse-menschengemachter-dinge-wiegt-30-billionen-tonnen-7219108.html

-Focus: http://www.focus.de/panorama/welt/wissenschaft-masse-menschengemachter-dinge-wiegt-30-billionen-tonnen_id_6277192.html

-Weser Kurier: http://www.weser-kurier.de/deutschland-welt/deutschland-welt-vermischtes_artikel,-Masse-menschengemachter-Dinge-wiegt-30-Billionen-Tonnen-_arid,1505934.html

-Austria: Der Standard (1.12.): http://derstandard.at/2000048605286/Die-Technosphaere-der-Erde-wiegt-30-Billionen-Tonnen

-Switzerland: 1Nachrichten (1.12.): https://1nachrichten.ch/technosphare-der-erde-wiegt-30-milliarden-tonnen/

Recent TV releases (German TV-channels)

-25. Oct SAT 1 News & Stories: Das Anthropozän / Reinhold Leinfelder: auf dem Weg in ein neues Erdzeitalter. Interview of R. Leinfelder with movie producer Alexander Kluge (45 min): http://magazin.dctp.tv/2016/10/25/heute-abend-im-tv-das-anthropozan-25-10-2016-0045-uhr-bei-news-stories-auf-sat1

-5./26. Oct. 2016: 3SAT Nano: Anthropozän. Das Zeitalter der Menschheit hat begonnen.25. Oct. 18:30, Wh. 26. Oct 7:00, Mediathek: http://www.3sat.de/mediathek/?mode=play&obj=62481

Radio, TV, video-podcasts

-13. Dec. 2016: Forschergeist: FG 093 Das Anthropozän. Ein neues Zeitalter - der Mensch prägt Gesicht und Wesen der Welt. Reinhold Leinfelder im Gespräch mit Tim Pritlove, video podcast 92 Min. https://forschergeist.de/podcast/fg039-das-anthropozaen/ (also via MERTON Magazin des Stifterverbandes vom 4. Jan. 2017)

-7./8./11 Feb. 2017: ARD alpha Campus DISKURS: Seit wann leben wir im Anthropozän, Herr Leinfelder? http://programm.ard.de/TV/Programm/Sender/?sendung=2848773934141/)

-19. Feb. 2017: Zukunfterde youtube-Kanal: Wie können wir den Planeten retten. Harald Lesch & Reinhold Leinfelder im Gespräch,: https://www.youtube.com/watch?v=M7midHblsxc

-2. March 2017: rbb-inforadio / WissensWerte , Leben im Anthropozän, 10:25 short feature >mediathek;

-5. March, 9:45 (and 19:45) studio talk with R. Leinfelder http://www.inforadio.de/programm/schema/sendungen/wissenswerte/201703/107952.html

-10. April 2017 / 5. March 2017: rbb-inforadio / WissensWerte am Sonntag , Anthropozän - Das Zeitalter des Menschen, 9:45 (and 19:45) 15 min studio talk with T. Prinzler and R. Leinfelder, also available online since 4. March 2017 http://www.inforadio.de/programm/schema/sendungen/wissenswerte/201703/104308.html also available in rbb mediathek

-2 May 2017 105,5 SpreeRadio , Wir schätzen Berlin, 50/50 Mix mit Thomas Koschwitz (Interview with R. Leinfelder on Technosphere)

-16 May 2017 98,2 Radio Paradiso, Berlin , Paradiso am Morgen: Wieviel wiegt Berlin? (Interview with R. Leinfelder)

-28. April 2017 rbb radioBERLIN 88,8 , Die kurioseste Zahl der Woche - Berlin wiegt 2 Milliarden Tonnen, Dein Feierabend, ca. 18:45 (Interview with R. Leinfelder)

-28 Nov 2017, 8:40 Uhr Deutschlandfunk Kultur , Korallensterben: Rettung durch Transplantation? Reinhold Leinfelder im Gespräch mit Dieter Kassel. Mediathek und Textfeature

Print and online media (selection): from 2017

-7. Jan. 2017:Bild der Wissenschaft 02/2017, S. 58-59: Technofossilien überall. Geologen rekonstruieren den Übergang in ein neues Erdzeitalter. (von R. Leinfelder) in Titelgeschichte: Welche Zukunft wollen wir? (print;)

-4. Feb. 2017: MERTON - Onlinemagazin des Stifterverbandes : Anthropozä,z - Das Zeitalter des Menschen ist angebrochen https://merton-magazin.de/anthropozaen-das-zeitalter-des-menschen-ist-angebrochen . Mit Link zum Forschergeist-podcast-Interview mit R. Leinfelder

-14. Feb. 2017: Stuttgarter Zeitung (print, Nr. 37, S.16): "Die Erde wie eine Stiftung behandeln". Interview: Der Forscher Reinhold Leinfelder wirbt für eine Symbiose von Mensch und Erde. Dabei könnten auch neue Technologien helfen. Online-Version vom 13.2.2017, 18:50 hier. Identisch auch in Stuttgarter Nachrichten

-16. Feb. 2017: Bild der Wissenschaft (online): "Welche Zukunft wollen wir?". http://www.wissenschaft.de/zukunft

-18 Apr 2017: diesseits - das humanistische Magazin: Forschung fordert zum Umdenken auf. Interview zum diesseits.de/menschen/interview/1492466400/forschung-fordert-zum-umdenken

-26 Apr 2017: BZ Berlin: Ach du dickes B! Der Mann, der Berlin ein Gewicht gibt, Titelseite / S. 4 (print) bzw. online sowie BILD-Zeitung

-2 Oct 2017: Science Daily: Scale of human impact on planet has changed course of Earth's history, scientists suggest Anthropocene Working Group scientists publish recommendations for formalizing new geological epoch. www.sciencedaily.com/releases/2017/10/171002105215.htm

-4 Oct 2017: Osttirol heute: Nationalpark-Tagung warf 'neuen Blick' auf die Erde. www.osttirol-heute.at/heute/natur/26301-nationalpark-tagung-warf-neuen-blick-auf-die-erde

Reinhold Leinfelder also writes public contributions on the Anthropocene via Spektrum Scilogs, on his "Der Anthropozäniker"-Weblog (also accessible via http://anthropocene.de)

Will Steffen:

-ABC (Australian Broadcasting Corporation) Radio National breakfast show, 8 January 2016. Anthropocene and Earth System science

-Interview with Brisbane Times re: panel discussion on the Anthropocene at the World Science Festival, Brisbane, 9 March 2016

-Radio National – Colombia, interview on the Anthropocene, 6 May 2017

-ABC AM television show – interview on the Anthropocene, 24 May 2017

Davor Vidas:

-Davor Vidas, 2017. When the Sea Begins to Dominate the Land, *Technosphere Magazine*, HKW Berlin, April 2017: https://technosphere-magazine.hkw.de/p/fcb70350-0e7e-11e7-9141-9ffac9f54d8d

-A notice in *Envirotec Magazine*, 23 November 2017, about the launch of the 'Anthropocene' book series by Skolska knjiga publishing house in Zagreb, Croatia, in November 2017:

https://envirotecmagazine.com/2017/11/23/book-explores-future-impact-of-the-anthropocene/

-Article in *Der Tagesspiegel*, 30 October 2017, commenting a lecture by Davor Vidas on 'The Law of the Sea for the New Epoch?' given at the Hamburger Bahnhof Museum in Berlin: http://www.pnn.de/kultur/1229936/

Michael Wagreich:

-Radio discussion with Marina Fischer-Kowalski 22/12/16

-Reaction via the University of Vienna press release from our NoS paper:

http://medienportal.univie.ac.at/presse/aktuelle-pressemeldungen/detailansicht/artikel/anthropozaen-das-zeitalter-des-menschen/

https://science.apa.at/site/natur_und_technik/detail.html?key=SCI_20170425_SCI39471352435687908

http://www.extremnews.com/berichte/wissenschaft/4e3816401c6eb2b

https://idw-online.de/de/news673543

Colin Waters:

During and after IGC following media interest:

-Interviews with Meghie Rodrigues (Museum of Tomorrow- Rio de Janeiro) and Paul Voosen (American Association for Advancement of Science).

-In advance of IGC there have been a few news items appearing such as in Science http://www.sciencemag.org/news/2016/08/atomic-bombs-and-oil-addiction-herald-earth-s-new-epoch-anthropocene

-Independent http://www.independent.co.uk/environment/anthropocene-epoch-holocene-planet-earth-geology-rocks-climate-change-global-warming-a7197491.html

http://www.dailymail.co.uk/sciencetech/article-3747872/The-hunt-golden-spike-Scientists-search-moment-humanity-changed-planet-forever-triggered-Anthropocene-era.html

-Interview with Damian Carrington Head of environment The Guardian;

-Jonathan Amos BBC http://www.bbc.co.uk/news/science-environment-39133897

-Alister Doyle Reuters http://www.srnnews.com/new-minerals-back-idea-of-man-made-epoch-for-earth-study-2/?tc=eml

-Interview for Foresight (Climate & Energy Business Denmark)

Mark Williams:

Appeared on BBC Newsnight on 20th February 2016 http://www.bbc.co.uk/news/science-environment-35692252

Jan Zalasiewicz:

-Jan Zalasiewicz, Colin Waters, Jacques Grinevald, Catherine Jeandel, Alexander P. Wolfe and Clément Poirier contributed to an article in La Recherche entitled “Pourquoi il faut faire reconnaître l’Anthropocène comme époque géologique nouvelle”

-Zalasiewicz, J. 2016. What mark will we leave on the planet? – a history in layers. Scientific American, September 2016, 30-37.

-Zalasiewicz, J. 2017. Science and society of the Anthropocene: Transition from the Holocene. Science, People and Politics **2**(Apr-June), 9-16.

-Zalasiewicz, J. 2016. Pp. 31-70 in Linke, A. *L’apparenze di ciò che non se vede (The appearance of that which cannot be seen)*. Padiglione d’Arte Contemporanea/Center for Art and Media Karlsruhe, Silvana Editoriale, 404 pp.

-Spektrum der Wissenschaften http://www.spektrum.de/inhaltsverzeichnis/spektrum-der-wissenschaft-januar-2017/1373071

Colin Waters, Jan Zalasiewicz and Will Steffen: were involved in a programme for ABC in Australia released on 15th November 2016 for the series Catalyst: http://www.abc.net.au/catalyst/stories/4574615.htm.

Jan Zalasiewicz and Phil Gibbard:

VPRO Backlight on the Anthropocene will be broadcast on Sunday 29 January 2017, at 9pm Dutch time, on Channel 2 in the Netherlands. http://www.vpro.nl/programmas/tegenlicht/kijk/afleveringen/2016-2017/tijdperk-van-de-mens.html and http://www.vpro.nl/programmas/prijsvechter/aflevering-3.html

University of Leicester press releases:

29th August 2016 "Media note: Anthropocene Working Group (AWG)" https://www2.le.ac.uk/offices/press/press-releases/2016/august/media-note-anthropocene-working-group-awg

23rd March 2017 "The Anthropocene: Leicester scientists respond to criticisms of new geological epoch" https://www2.le.ac.uk/news/blog/2017-archive/march/the-anthropocene-leicester-scientists-respond-to-criticisms-of-new-geological-epoch

27th July 2017- "'Omnipresent' effects of human impact on England's landscape revealed by University of Leicester geologists" https://www2.le.ac.uk/offices/press/press-releases/2017/july/2018omnipresent2019-effects-of-human-impact-on-england2019s-landscape-revealed-by-university-of-leicester-geologists

5th August 2017 "Are we entering a new age?" https://www2.le.ac.uk/news/blog/2016-archive/august/are-we-entering-a-new-age

2nd Oct 2017 "Significant scale of human impact on planet has changed course of Earth's history, scientists suggest" https://www2.le.ac.uk/offices/press/press-releases/2017/october/significant-scale-of-human-impact-on-planet-has-changed-course-of-earth2019s-history-scientists-suggest

An audio interview about changes to the Earth with Professors Jan Zalasiewicz and Mark Williams is available here: https://soundcloud.com/university-of-leicester/the-earths-technosphere-shows-how-we-are-permanently-reshaping-our-planet

20th November 2017, about the launching of the book series *Anthropocene* in Croatia: https://www2.le.ac.uk/news/blog/2017-archive/november/anthropocene-book-series-launches-in-croatia-with-book-on-the-far-future-earth-by-leicester-geologist

NEWS

The videos from the First AWG Working Group Meeting at HKW in Berlin in October 2014; one can also find access to the video recordings of the forum discussions

http://hkw.de/en/programm/projekte/2014/anthropozaenprojekt_ein_bericht/anthropocene_working_group_1/anthropocene_working_group_forum.php .

The Waters et al. 2016 paper published in Science was ranked #84 in the Altmetric Top 100 for 2016. It was also recognised as a "hot topic" and "highly cited" placed in the top 0.1% of papers in the academic field of Geosciences in Web of Science. The Top 100 is an annually released list of academic papers that have received the most attention in the previous year from sources tracked by data science company Altmetric. This includes coverage in the mainstream media, shares and discussions

on social networks and blogs, references in Wikipedia and public policy documents, and comments on post-publication peer-review forums.
The full list is on https://www.altmetric.com/top100/

Carbon Brief published in early 2017 (12 January) an analysis of climate papers that were most featured in the media in 2016. Among the top-10 papers for news and social media attention, the AWG Science paper came at the 4th place in that list:

https://www.carbonbrief.org/analysis-climate-papers-featured-media-2016

- One of the ten most read items of news on the website of the Norwegian national broadcaster NRK in 2016 was 'En ny epoke' ('A new epoch'), which explained the concept of the Anthropocene in the evolution of the Earth. Downloaded ca 305,000 times, much of the article was based on an interview with Felix Gradstein and the meeting of the AWG at the FNI in April that year was announced. The list of ten most read NRK news is found at: https://www.nrk.no/kultur/dette-er-arets-mest-leste-saker-pa-nrk.no-1.13286778

- **The WWF/ZSL Living Planet Report 2016** AWG work makes the Executive Summary and it is mentioned several times throughout the report. The well-illustrated report includes a useful summary of recent biotic change relevant to our studies.
  https://www.worldwildlife.org/pages/living-planet-report-2016

- The **Interim Report of the ILA Committee on International Law and Sea Level Rise**, which was presented at the 77th Biennial Conference of the International Law Association, Johannesburg, August 2016, and thereupon published in November 2016, includes a section about the Anthropocene in the background for the Committee establishment (Part I, Section C, pp. 7-9).

- Tom Friedman's book "Thank You for Being Late" discusses the Anthropocene and refers not only to the AWG January 2016 paper in Science but also, extensively, to the work of Will Steffen and Johan Rockstrom.

- Clive Hamilton's book "Defiant Earth: the fate of Humans in the Anthropocene" (Polity Press 2017) provides an ethical perspective to the debate.

- Andrew Revkin's personal take on the Anthropocene is an excellent insider's view http://www.anthropocenemagazine.org/anthropocenejourney/

- A web-based article by Sophie Yeo, "Anthropocene: History of an Idea", published in Carbon Brief, 5 October 2016:
  https://www.carbonbrief.org/anthropocene-journey-to-new-geological-epoch

- Documentary film by Steve Broadshaw, which in the course of 2016 and 2017 was shown at a number of documentary film festivals in several countries:
  http://www.anthropocenethemovie.com/where-to-see/

  and was also distributed by Bullfrog films as an education DVD/video: http://www.bullfrogfilms.com/catalog/anthro.html

- Jennifer Baichwal has been in touch to say that the Mercury Films documentary film project is fully in production and editing mode http://www.mercuryfilms.ca/index.php?show=68. If you are

interested in hearing more about the travelling museum exhibition, there is a link to the press release:
http://ago.ca/Press-Releases/art-gallery-ontario-and-national-gallery-canada-co-present-major-exhibitions

Michael Wagreich reports on projects running at the University of Vienna:

Wolfgang Knierzinger (PhD Project): The Alpine Early Anthropocene – Geochemical studies in minerotrophic and ombrotrophic peatlands to assess regional phases of mining activity in prehistoric times and regional climatic changes in the Eastern Alps.

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

Mark Williams is supervising Stephen Himson (PhD project) at University of Leicester, researching the use of invasive species in defining the biostratigraphy of the Anthropocene, focussing on San Francisco Bay.

MEMBERSHIP TO DATE

Listed here are names of members to date and their contact details (as of 1st December 2017).

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, LE1 7RH.
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
103 Old Chem Box 90320 Durham NC27708 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

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

James Syvitski
Institute of Arctic and Alpine Research, University of Colorado, Boulder Campus, Box 545, Boulder CO, 80309-0545, USA
e-mail: james.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: Davor.Vidas@fni.no

Davor is also linked to the School of Geography, Geology and the Environment, University of Leicester, in a visiting status, for the next three years.

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 2018

- Guided by the Earth-Science Reviews publication make final selection of suitable GSSP locations and key signals to be analysed.
- Seek funding/collaboration partners to acquire necessary core from potential GSSP sites and carry out multi-proxy analysis.
- 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.
- 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.
- Work towards possible open-invitation AWG meetings in 2018 and 2019. Seek co-funding organisations who would agree to host the meetings and support travel costs.

Jan Zalasiewicz (Chair)

Colin Waters (Secretary)

16th December 2017