

# Human traces in lake sediments: Towards a database for extracting regional signals

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Human Traces workshop, Bariloche, Argentina, 3 December 2022



What is a human trace and how does it manifest in the environment? Since its inception in 2021, members of the Human Traces working group (WG) ([pastglobalchanges.org/human-traces](https://pastglobalchanges.org/human-traces)) have been exploring possible answers to this complicated and multifaceted question through a series of online workshops and lectures (recordings are available on our YouTube channel here: [shorturl.at/dghW7](https://shorturl.at/dghW7)).

In December, we continued these discussions at our first in-person workshop which was held in Bariloche, Argentina, following our Human Traces in the aquatic sedimentary record session on 3 December at the International Association of Limnogeology and International Paleolimnology Association (IAL-IPA) 2022 Joint Meeting ([pastglobalchanges.org/calendar/129293](https://pastglobalchanges.org/calendar/129293)).

The workshop was attended by 20 people from 11 countries, including nine early-career researchers (ECRs), with strong representation from Latin America. This was

the occasion to establish a subgroup made up of members from this region, with the aim of crafting an in-depth regional review of human traces in Central and South America (Fig. 1).

This subgroup is open to anyone who has an interest, and can contribute to, the topic. It is coordinated by Human Traces WG member Julieta Massafarro ([jmassafarro@comahueconicet.gob.ar](mailto:jmassafarro@comahueconicet.gob.ar)), who can provide further information about the initiative for those interested.

Attendees at the workshop also discussed plans to start working on a synthesis on the subject of reservoirs and the long-term development of anthropohydrocosms (a human-made body of water) (Saulnier-Talbot and Lavoie 2018) as agents of human traces in the environment.

The tentative objective of this subgroup would be to assess the use of the paleolimnological approach to evaluate and quantify

anthropogenic impacts on the environment through time, via the creation and modification of aquatic ecosystems. This project is co-led by ECR Léo Chassiot ([leo.chassiot.1@ulaval.ca](mailto:leo.chassiot.1@ulaval.ca)) and WG coordinating member Émilie Saulnier-Talbot ([emilie.saulnier-talbot@bio.ulaval.ca](mailto:emilie.saulnier-talbot@bio.ulaval.ca)). All paleoscientists interested in participating are welcome to get in touch.

Finally, the workshop was also the occasion to update participants on the progress made by the lead proxy subgroup, who have already held an online workshop to develop a synthesis of lead as an indicator of human traces in sedimentary archives.

ECR Madeleine Moyle ([maddy.moyle@liverpool.ac.uk](mailto:maddy.moyle@liverpool.ac.uk)) and WG coordinating member John Boyle ([jfb@liverpool.ac.uk](mailto:jfb@liverpool.ac.uk)) are co-leaders of this subgroup. They held an online meeting in April 2023 and are planning an in-person meeting this year, with a provisional date in September 2023.

The group is currently collecting data and is working closely with the Neotoma community on developing a database for geochemical archives in lake sediments. If you have anything to contribute, please contact the co-leaders of the Human Traces WG ([pastglobalchanges.org/science/wg/human-traces/people](https://pastglobalchanges.org/science/wg/human-traces/people)). For regular updates about the Human Traces WG and its activities sign up to the mailing list ([listserv.unibe.ch/mailman/listinfo/human-traces.pages](mailto:listserv.unibe.ch/mailman/listinfo/human-traces.pages)).

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## REFERENCES

Saulnier-Talbot É, Lavoie I (2018) *Anthropocene* 23: 29-42



**Figure 1:** Human Traces in Latin America identified in different biogeographical areas: Mesoamerica (yellow circle) including México and Central America; the Andes (gray circle) including the western part of Ecuador, Peru, Argentina, and Chile; the Pampas (red circle) including Central Argentina and Uruguay; Patagonia (blue circle) including southern Argentina and Chile; and Amazonia (purple circle) including most of Brazil, and part of Colombia, Venezuela, Peru and Bolivia. The time intervals of interest for the Human Traces WG are: Pre-columbian (before 1500 CE), European colonization (between 1500 and 1900 CE) and modern times (1900 CE up to present).