



Project Number: 101062427

Project Acronym: PALEOSIM

Project Title: PALEOclimate modelling of Small Islands in the Mediterranean and possible impacts on arthropod habitats

DCP: Dissemination and Communication Plan

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1 Early-stage Communication

The primary communication efforts for PALEOSIM were immediate, with the launch of an online presence (WS) and participation in the Maltese European Researchers' Night (ERN), 'Science in the City 2022' (henceforth referred to as EM1). The Citizen-science Observation Program (COP) was originally scheduled for a November launch (according to the Gantt Chart presented in the project proposal), however the EM1 was an ideal opportunity to launch the COP and thus the preparation and launch were altered to an earlier date.

1.1 Website and social media

The project website went live on the 1st September 2022 and is part of the University of Malta domain. The main page can be found on the URL: <https://www.um.edu.mt/projects/paleosim>, which showcases a thematic banner, a description of what the project is, the funding source, and the pages of the website – which includes the following:

- i. *The Project* – a description of the project concept and aims, as well as links to the social media pages of the project;
- ii. *Research Team* – a list of the researchers involved in the project, as well as a description of the collaborating entities;
- iii. *Project Updates* – a section that serves as an archive of the major updates of the project, including milestones and deliverables;
- iv. *Outreach* – a section similar to “Project Updates” in concept but focused entirely on Outreach activities and their results;
- v. *Citizen Science Programme* – an area dedicated to introducing basic concepts of the project, specifically “What are arthropods?” and “What is the study region?”, and to provided clear and concise instruction on how to participate in the COP;
- vi. *Contact us* – contact details of the Marie Curie Fellow.

An infographic on Arthropods (Figure 1) was prepared from the experience obtained during the “Training for Arthropod Classification & Species of Interest” (TR1). This was included in the “Citizen Science Programme” section of the website, and a printed version was used in the EM1 activity. This material will be used in future outreach activities.

Social media updates will be primarily on Facebook and ResearchGate, and LinkedIn where possible. The Institute of Earth Systems – University of Malta Facebook page (<https://www.facebook.com/um.earthsystems>) will act as the primary connection to social media, and was used to announce the website and activity at the EM1 (Figure 2). The project was also listed on ResearchGate (<https://www.researchgate.net/project/PALEOSIM-Marie-Sklodowska-Curie-Actions>), which will serve as a social media area dedicated specifically to PALEOSIM. Any updates and news items will be shared on these pages, and when possible on LinkedIn through the researcher's personal profile.

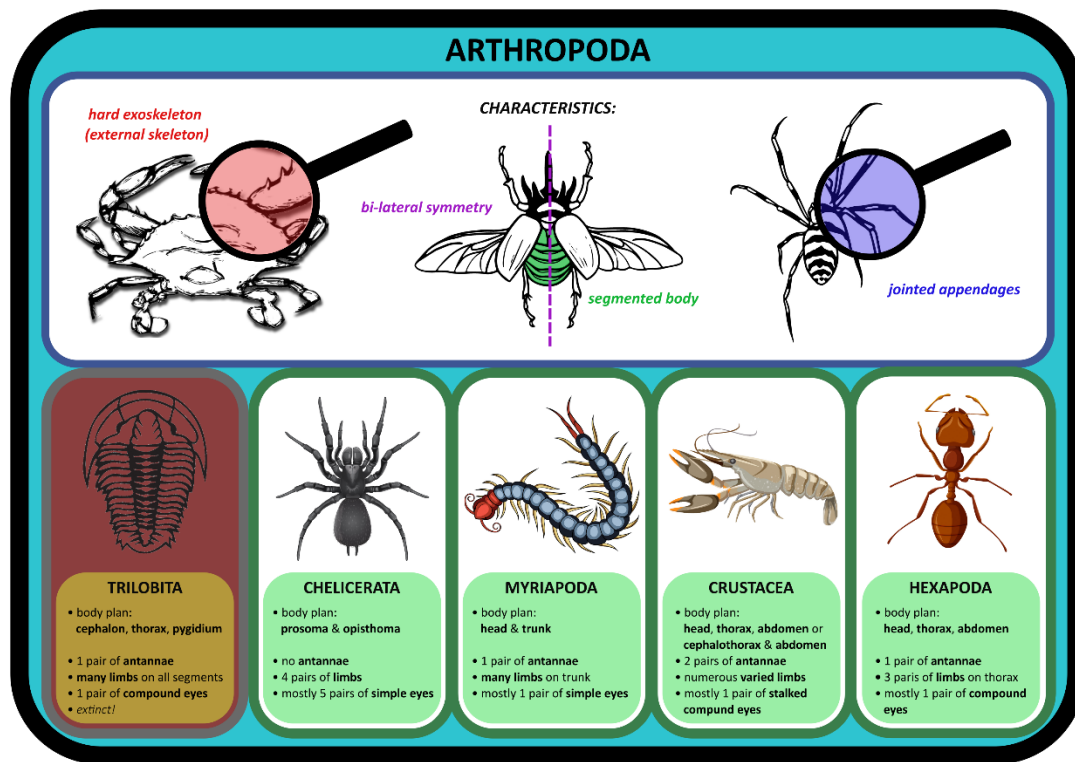


Figure 1. Arthropod infographic created with Inkscape and creative commons vector images.

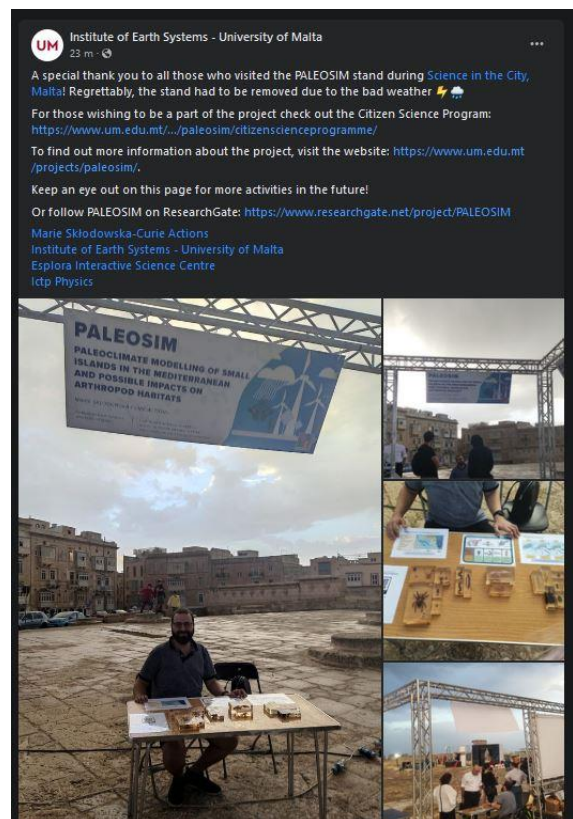
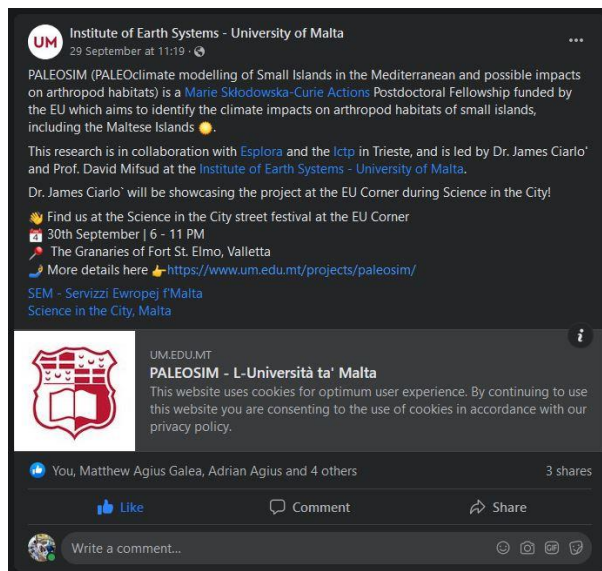


Figure 2. First Facebook posts announcing the project and activity at EM1.

1.2 Science in the City 2022 (EM1), 30th September 2022

As the first ERN was so close to the start of the project, no results could be presented. Nevertheless, the project was showcased during EM1 through a stand at the entrance of the venue as part of the ‘EU Corner’. The stand (Figure 3), which was manned by the Marie Curie Fellow, included arthropod samples (preserved in resin and borrowed from the collection of Prof. David Mifsud, and from the Museum of the Department of Biology) which attracted a substantial number of visitors. The stand also included laminated information cards explaining arthropods, climate modelling, and the Circum-Sicilian Islands as the study region. A QR code was also included which provided access to the COP page and hence attract volunteers to the program. Regrettably, the stand was taken down early due to bad weather, however, the props and display items prepared will be used again in future outreach activities.



Figure 3. Marie Curie Fellow and PALEOSIM stand at the EM1 in Valletta, Malta – September 2022.

1.3 Citizen-science Observation Program (COP)

For the COP, the Epicollect5 app was used as a platform for data collection as it is easy to use, and a common platform for citizen-science. The application requires the users to join projects, and hence the PALEOSIM entry was created.

To add an entry, the volunteers answer a questionnaire which requests (a) up to 3 high-quality images of the observed specimen, (b) coordinates, date, and time of the observation, (c) a request to name the archipelago on which the observation was made, and (d) a guess for the type of arthropod observed. While only (a) and (b) are needed to construct the dataset, (c) and (d) act as quality control of the entry, as well as an educational exercise for participants.

The application's project settings selected also ensure that personal data from the volunteers would not be collected. The COP and the application were showcased during the EM1 and on social media, and will be showcased again in several upcoming outreach activities.

2 Academic Dissemination

The dissemination of the project through academic circles will take place through Seminars, Conferences, and Publications.

2.1 Seminars

Five seminars (S1 to S5) are planned for the duration of the project. The first was delayed to allow time for the project to start and allow the advertising of primary test results, as well as the COP. Each seminar will take place at one of the three participating institutes: the University of Malta (UM), the Abdus Salam International Centre for Theoretical Physics (ICTP), and the Esplora Interactive Science Centre (ESIC). The current plan for the seminars is as follows:

1. UM Seminar: Project Introduction (*month, m4; 25th Nov 2022*)
2. ICTP Seminar: Climate impacts on Arthropod Habitats (*m7; Feb 2023*)
3. UM Seminar: Paleoclimate and Arthropod Habitats (*m18; Jan 2024*)
4. UM Seminar: Project conclusion (*m24; Jul 2024*)
5. EISC Seminar: Public display launch (*m30; Jan 2025*)

It is also important to note that the abovementioned seminars, will not be exclusive to academics associated with the geosciences or biology. Non-academics and students within the respective institutes will also be invited to join. Unlike the first four seminars, the target audience of the final seminar (S5) will be non-academic, as it should also unveil the display completed throughout the project placement.

2.2 Conferences and workshops

The proposal for PALEOSIM considered three major conferences (C1 to C3), however, after discussions with Prof. David Mifsud, the European Congress of Entomology (ECE) replaced the proposed C1 conference since the ECE is linked to the reputable Royal Entomological Society. The American Geophysical Union (AGU) Fall Meeting and European Geosciences Union (EGU) General Assembly will remain in the schedule since these bring together researchers from all fields related to Geosciences, and PALEOSIM provides the opportunity to expand on the applications of climate impacts.

Following suggestions by Dr Erika Coppola, the Marie Curie Fellow also plans to attend two additional activities, the CORDEX Conference, and the RegCM Workshop which are happening back-to-back in Trieste. This is being considered since WP1 is making use of the CORDEX data-set and WP2 and WP3 are heavily focused on the RegCM model. A summary of these upcoming activities is shown below, including the new entries which are listed as C0 and W0 respectively.

- C0: CORDEX Conference (*Trieste, Italy; 25-29 Sep 2023*)
- W0: RegCM Workshop (*Trieste, Italy; 2-13 Oct*)
- C1: XII European Congress of Entomology (*Hersonissos, Crete; 16-20 Oct 2023*)
- C2: American Geophysical Union Fall Meeting 2023 (*USA; Dec 2023*)
- C3: European Geosciences Union General Assembly 2024 (*Vienna, Austria; Apr 2024*)

2.3 Publications

The research component of PALEOSIM consists of the first three work packages (WP). A submission to a reputable peer-reviewed journal is envisaged at the end of each WP. WP1 is associated with the climate links to arthropod habitats and hence, 'npj Climate and Atmospheric Science' (*m10, May 2023*) would be a thematic choice. WP2 is focused on the high-resolution climate simulations, in-conjunction with Land-Use Change (LUC) the current proposed submission would go to 'Journal of Advances in Modelling Earth Systems' (*m19, Feb 2024*). Finally, as WP3 brings together all aspects and fields associated with PALEOSIM, and presents a new modelling perspective to climate impacts across millennia, the final submission will be to 'Nature Climate Change' (*m24, Jul 2024*).

3 Public Communication

Communication and outreach with non-academics are essential to PALEOSIM; not only to reach more potential volunteers for the COP, but the message and outcome of the project is meant to provide a new perspective of the fragile nature of ecosystems on small islands, and hence more people are encouraged to take action and preserve the environment. With this in-mind, the communication plan includes an online presence, participation in European Researchers' Nights, appearances in local news outlets, various public talks, citizen-science, and finally the collaboration with the EISC.

3.1 Online presence

Any project updates, news items, and announcements will be included in the project website, and circulated on social media as described in Section 1.1.

3.2 European Researchers' Nights

Known as 'Science in the City', the European Researchers' Night (ERN) in Malta is one of the largest scientific outreach events of the year (attracting over 30,000 visitors every year), hence PALEOSIM will be participating in local ERNs where possible.

The first participation was in 'Science in the City 2022' (EM1) at the end of September 2022, which was detailed in Section 1.2. Since the study domain for PALEOSIM also includes various small Sicilian islands, outreach in Sicily is highly recommended. Thus, the Marie Curie Fellow and Prof. David Mifsud are in contact with colleagues at the University of Catania to participate in outreach activities in Sicily, especially an ERN¹ (ES). Finally, towards the end of the project, PALEOSIM will be present once again in 'Science in the City 2024' (EM2)

3.3 Schools and Public Talks

PALEOSIM will also participate in several smaller outreach activities; Public talks in Malta and Sicily (PM & PS), and in Local Schools (LS). Activities in Malta will be coordinated with the experienced teams at the Institute of Earth Systems of the University of Malta, as well as the EISC. For the Sicilian activities, a contact has been established with the University of Catania for the setup of these activities.

¹ The ERN is usually held on the last week of September, therefore the dates of these activities need to be weighed carefully, as this may conflict with Conferences listed in Section 2.2.

Currently two activities are being planned. The EISC is organising a ‘Meet the Researcher’ even at the museum for ‘World Children’s Day’ between the 18th and 20th November 2022. The Marie Curie Fellow will be present with other researchers of the Institute of Earth Systems to showcase local research with non-academics and school children. The Institute is also planning a public-talk followed by field-work to encourage and train volunteers to participate in the COP.

3.4 Citizen-science Observation Program (COP)

The COP, detailed in Section 1.3, has been launched and will remain an ongoing activity until the end of the project. New volunteers will be encouraged to participate with every public event (listed in previous sections).

3.5 News items

As project updates and events will be shared on the project page and social media, major milestones of the project will be shared on the University of Malta Newspoint (a weekly bulletin sent to all University staff and students), as well as on local news TV networks.

3.6 Museum Display

The final 6 months of the project will be focused on the Placement at EISC, where the Marie Curie Fellow and the Esplora team will prepare a Display feature to be included in the museum. The communication activities being prepared in collaboration with EISC throughout the research phase of the project, will also foster new ideas in preparation to the placement-phase of the project.

4 Project Deliverables

The progress of the project will be detailed in several thematic reports which will be submitted as deliverables to the European Commission, where they will be eventually made public. The full list of deliverables expected for PALEOSIM, including peer-reviewed papers, and the Museum Display are detailed below:

- Report: Dissemination and Communication Plan (DCP) - D5.1 (*m3, Oct 22*)
- Report: Personal Career Development Plan (PCDP) - D6.1 (*m4, Nov 22*)
- Report: PCDP - Financial Management Plan (FMP) - D6.1 (*m4, Nov 22*)
- Report: PCDP - Risk Contingency Management Plan (RCMP) - D6.1 (*m4, Nov 22*)
- Report: PCDP - Data Management Plan (DMP) - D6.1 (*m4, Nov 22*)
- Publication to ‘npj Climate and Atmospheric Science’ - D1.1 (*m10, May 23*)
- Report: Technical and Financial Report 1 - D6.2 (*m12, Jul 23*)
- Report: Training and Secondment Report (TSR) - D4.1 (*m17, Dec 23*)
- Publication to ‘Journal of Advances in Modelling Earth Systems’ - D2.1 (*m19, Feb 24*)
- Report: Technical and Financial Report 2 - D6.3 (*m24, Jul 24*)
- Publication to ‘Nature Climate Change’ - D3.1 (*m24, Jul 24*)
- Report: Report on Suggested Policies - D5.2 (*m25, Aug 24*)
- Display: Museum Display and IDA - D4.2 (*m30, Jan 25*)