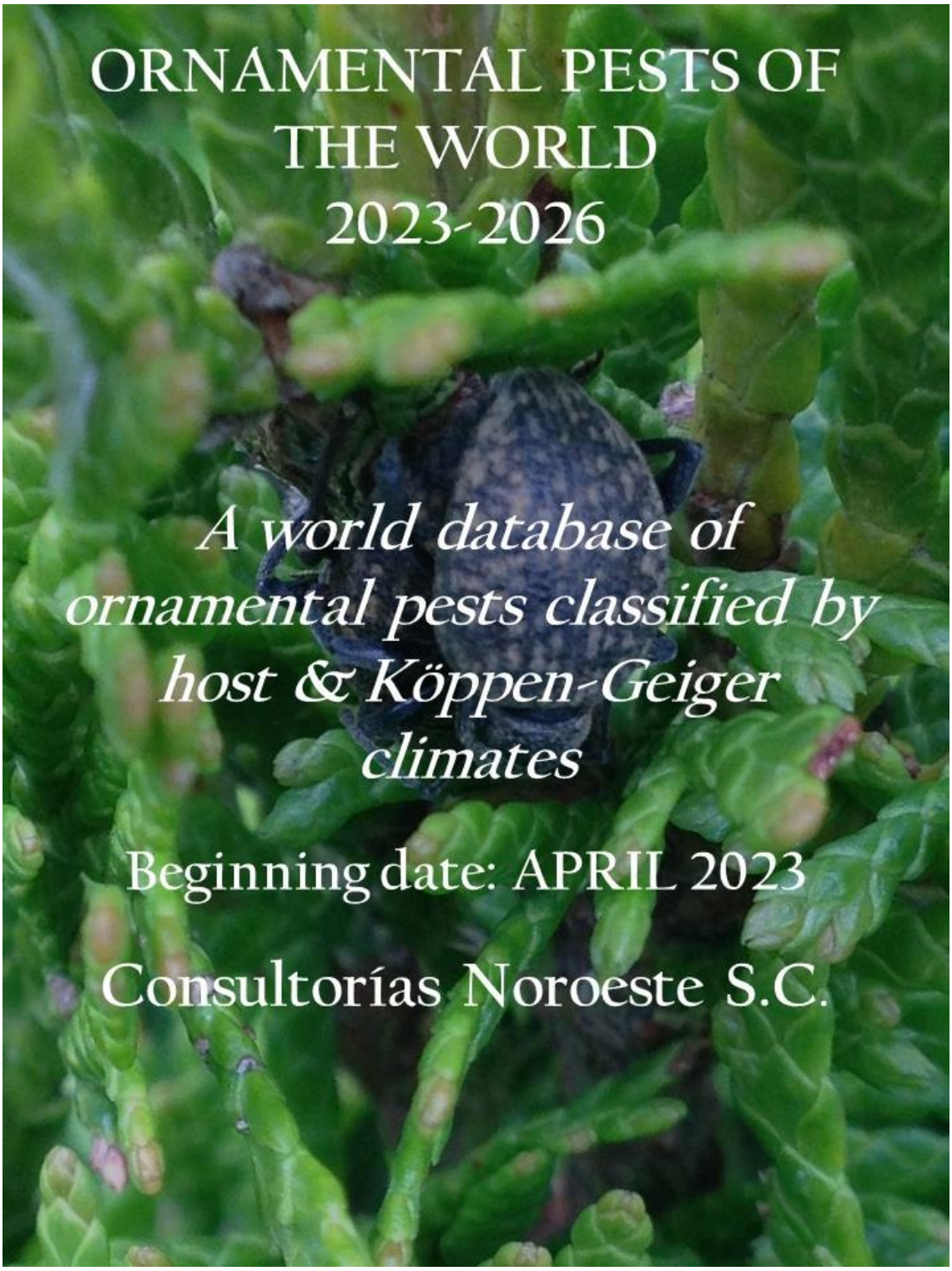

ORNAMENTAL PESTS OF THE WORLD
2023-2026
A world database of ornamental pests classified by host & Köppen-Geiger climates
Beginning date: APRIL 2023
Consultorías Noroeste S.C.

PROJECT ORNAMENTAL PESTS OF THE WORLD

A WORLD DATABASE OF ORNAMENTAL PESTS CLASSIFIED BY HOST & KöPPEN-GEIGER CLIMATES

BASES AND METHODS FOR THE COLLABORATION IN THE PROJECT

1.- AIMS AND SCOPE OF THE COLLECTIVE PROJECTS

1.1. Collective Project

The general objective is to obtain collective publications and databases with the aid and collaboration of people specialized in Entomology & Plant Protection from different parts of the world.

1.2.- Nongovernmental project.

Without the aim of underestimating the excellent work carried out by the different administrations that carry out projects concerning Entomology & Plant Protection, the present project, as well as each of the projects and publications carried out by the private consultants CONSULTORÍAS NOROESTE S.C., has no type of government economical funds. It is open to the collaboration with people that work at the different governments and administrations but not with the governments.

1.3.- Without public funds.

All of the collaborators would obtain, for the collaboration, the co-authorship of all of the publications obtained from the project, a free copy of all of them, the free access to the databases obtained by the project and, on certain situations, a free bonus for the purchase of publications of the consultants CONSULTORÍAS NOROESTE S.C. The project has no type of public or private economical funds and the collaborators will not receive any type of economical fee for the collaboration.

2.- PROJECT SCIENTIFIC BACKGROUND & GENERAL OBJECTIVES OF THE PROJECT

2.1.- SCIENTIFIC BACKGROUND

The pest scenario varies from place to place with the variation in the agro-climatic conditions of the locality. Information on pest complex in a specific agroecosystem is really essential in devising pest management strategies which would not only be economically feasible but also ecologically sound. (Khan et al., 2019). On the other hand, the global trade in 'plants for planting' is a recognized pathway for the accidental introduction of pests and pathogens even though plant health legislation exists to minimize such accidental introductions. (Tubby & Webber, 2010).

The predicted change in our climate is likely to affect the development and survival of the pests and pathogens, and their natural enemies, competitors and vectors. This may alter the impact of native pests and diseases and increase the populations of some species not currently recognized as pests to epidemic proportions. Perhaps most significantly, climate change is very likely to enhance the suitability of our climate for a range of non-native pests and pathogens, many of which are brought in unknowingly on infected planting stock sourced for new greening schemes. (Tubby & Webber, 2010).

Changes in climate may result in changes in geographical distribution of species, changes in population growth rates, increases in the number of generations, extension of the growing season, changes in crop-pest synchrony, changes in interspecific interactions and increased risk of invasion by migrant pests. Insects are exothermic organisms, the temperature of their bodies is dependent on that of the environment. Therefore, temperature is probably the single most important environmental factor influencing insect behaviour, distribution, development, survival, and reproduction. Higher average temperature might result in some crops being able to be grown in regions further north and it is likely that at least some of the insect pests of those crops will follow the expanded crop areas. Insect species diversity per area tends to decrease with higher latitude and altitude meaning that rising temperatures could result in more insect species attacking hosts in temperate climates. Based on the evidence developed by studying the fossil record, some researchers conclude that the diversity of insect species and the intensity of their feeding

have increased historically with increasing temperature. There is likely to be an increase of the number of generations of pests and higher population density in connection with the prolonged growing season. An increase in the number of generations means an increase in the number of reproductive occasions per year. It has been estimated that with a 2°C temperature increase in temperate climate zones insects might experience one to five additional life cycles per season. If the mortality per generation does not change, the insect population will become potentially larger under global warming. This fact could play an important role in the case of multivoltine species, most of them are expected to wider their occurrence to higher latitudes and altitudes as was recorded e.g. in many cases of butterflies. Warmer conditions may be expected to promote the poleward extension of the range of species currently limited by low temperature or the altitude at which they can survive. A 2°C rise in temperature, which is expected in northern temperate latitudes over the next century, is equivalent to a shift of current conditions of 600 km latitude or 330 m in elevation. Some researchers declare that the effect of temperature on insects largely overhangs the effects of other environmental factors. (Kocmankova et al., 2009).

2.2.- GENERAL OBJECTIVES

1.- Carry out a global database of data and photographs of ornamental pests of the world, classified by hosts & Köppen Geiger climates.

2.- Study the influence of Climate Change on the incidence of ornamental pest species in the world.

3.- SPECIFIC OBJECTIVES OF THE PROJECT

The project has the following specific objectives:

1.- Carry out a global database of data and photographs of ornamental pests of the world, classified by hosts & Köppen Geiger climates. The database will be written in English language.

2.- Write a digital visual guide of ornamental pests of the world to be written in English language, edited and published by CONSULTORÍAS NOROESTE S.C.

3.- Write technical and scientific papers of ornamental pests of the world classifying them by host & Köppen Geiger climates as well as in the following way:

- Hemíptera
- Coleóptera
- Lepidóptera
-Díptera
- Hymenoptera
- Thysanoptera
- Orthoptera
- Collembola
- Dermaptera
- Dictyoptera
- Trichoptera
- Mites
- Miscelaneous pests: woodlice, millepedes, Symphylids, Slugs and snails & Earthworms.

The scientific and technical publications will be written in English language and they will all be published in the issue PROFESSIONAL PLANT PROTECTION. The consultants have purpose to publish at least one scientific paper as well as another technical review on each of the number of the issue to be published on 2024. The rest will be published the following years.

4.- BASES FOR THE COLLABORATION IN THE PROJECT

There are two ways of collaboration in the project: as a punctual co-author and as an active co-author.

4.1.- Punctual co-authors:

4.1.1.-Requirements for punctual co-authors.

- Punctual co-author: must be a Plant Health specialist, Plant Quarantine specialist, phytosanitary inspector, entomology researcher or professor or plant health technical responsible at a plant production centre.

The requirements to be accomplished by the punctual co-authors are the following:

1st .- Provide a minimum of 4 digital photographs of at least 1 ornamental pest – either of injuries or the own pest species -, of any country in the world.

2nd .- All of the provided photographs must have a minimum resolution of 300 ppp.

3rd You must also specify the following information:
- Author of the photograph
- Pest name: scientific name
- Host: specifying scientific name.
- Climatic-geographical area where the photographs were taken.
- Climate classification of the region where the pest was collected following Köppen-Geiger climate classification. For this purpose you may use the maps included in the Annex I of these bases.
4 th Date of the photograph.
5th The photographs will be published on the Linkedin website of the group International Plant Quarantine.

The editorial board of the consultants Consultorías Noroeste S.C. reserves the right of exclude the photographs of plant agents not considered ornamental pests in any country of the world in 2023. Either the inclusion or the exclusion of photographs will be specifically communicated to the author on the private Linkedin website of the group.

4.1.2.- Benefits of punctual co-authors

1st .-Co-authory of all of the publications obtained from the data base, either scientific or technical: all of the publications will be signed up by the WORK GROUP ORNAMENTAL PESTS OF THE WORLD and will include the lists of the members of the group.
2nd .-All of the digital publications obtained from the data base will be free for punctual co-authors: once published they will be sent to co-authors by email or we-transfer.
3rd .-Free access to the updated database on any moment of the year.
4th .- A 30 % discount on any of the digital publications of the consultants CONSULTORÍAS NOROESTE S.C., either digital guides or articles and complete numbers of the issue Professional Plant Protection.

4.2.- Active co-authors:

4.2.1.-Requirements for active co-authors.

- Active co-author: must be a Plant Health specialist, Plant Quarantine specialist, phytosanitary inspector, entomology researcher or professor or plant health technical responsible at a plant production centre.

The requirements to be accomplished by the punctual co-authors are the following:

1st .- Provide a minimum of 4 digital photographs of at least 30 ornamental pests of any country in the world. You must provide a minimum of 120 digital photographs.

2nd .- All of the provided photographs must have a minimum resolution of 300 ppp.

3rd You must also specify the following information:

- Author of the photograph
- Pest name: scientific name
- Host: specifying scientific name.
- Climatic-geographical area where the photographs were taken.
- Climate classification of the region where the pest was collected following Köppen-Geiger climate classification. For this purpose you may use the maps included in the Annex I of these bases.

4 th Date of the photograph.

5th The photographs will be published on the Linkedin website of the group International Plant Quarantine.

The editorial board of the consultants Consultorías Noroeste S.C. reserves the right of exclude the photographs of plant agents not considered ornamental pests in any country of the world in 2023. Either the inclusion or the exclusion of photographs will be specifically communicated to the author on the private Linkedin website of the group.

4.2.2.- Benefits of active co-authors

1st .-Co-authory of all of the publications obtained from the data base, either scientific or technical: all of the publications will be signed up by the WORK GROUP ORNAMENTAL PESTS OF THE WORLD and will include the lists of the members of the group.

2nd .-All of the digital publications obtained from the data base will be free for active co-authors: once published they will be sent to co-authors by email or we-transfer.

3rd .-Free access to the updated data base on any moment of the year.

4th .- A 30 % discount on any of the digital publications of the consultants CONSULTORÍAS NOROESTE S.C., either digital guides or articles and complete numbers of the issue Professional Plant Protection.

5th A 100 euros bonus for the purchase of any of the digital publications of the consultants CONSULTORÍAS NOROESTE S.C., either digital guides or articles and complete numbers

of the issue Professional Plant Protection. This bonus will not include the 30 % discount specified on the previous point.

4.3.- Members of the groups INTERNATIONAL PLANT QUARANTINE and AGRONOMY & CLIMATE CHANGE.

All of the members of the groups INTERNATIONAL PLANT QUARANTINE and AGRONOMY & CLIMATE CHANGE will have the right to be included in the project, as members of the GROUP ORNAMENTAL PESTS OF THE WORLD with complete rights, collaborating with the project or not. After the publication of these bases they will have an invitation to be included in the new GROUP ORNAMENTAL PESTS OF THE WORLD and the photographs included in the project INTERNATIONAL PLANT QUARANTINE that could be included in the new project will be added to the new ornamental pest database.

5.- PROGRAM FOR 2023/2024

This is a multiannual project that will be renewed for a maximum period of 4 years.:

Activity	**beginning**	**end**
- Basis publication	1/3/2023	
- Photographs supply	1/4/2023	31/12/2024
- Data base design and publications	1/4/2023	31/12/2024
- Publications	1/4/2023	31/12/2024
Estimated Publication dates		
- Practical digital visual guide	30/4/2024	
- Professional Plant Protection nº 16 **	31/12/2024	
- Professional Plant Protection nº 17 **	31/6/2024	

** Each of the specified issue numbers will include a minimum of one scientific paper as well as another technical review about ornamental pests of the world.

6.- COPYRIGHT, EDITIÓN, LAYOUT AND DESIGN

6.1.- Copyright

The copyright of the digital visual guides, obtained on the project, will have the following property:

- Consultorías Noroeste S.C.
- Group Ornamental Pests of the World.

The copyright of the publications included on the issue Professional Plant protection, will have the following property:

- Of the texts: Consultorías Noroeste S.C.

- Of the photographs: Ornamental Pests of the World – each member of the group will maintain the original copyright of the photographs supplied to the project -.

8.2.- Edition

The edition and correction of the digital visual guides as well as of the articles included on the issue Professional Plant Protection will be carried out by the following staff:
- Dr. José Luis Andrés Ares – Director and scientific and technical editor of Professional Plant Protection.

8.3.- Layout and design

The layout and design of all of the publications obtained from the present project will be carried out by the graphical edition and layout team of Consultorías Noroeste S.C.

10.- LANGUAGES

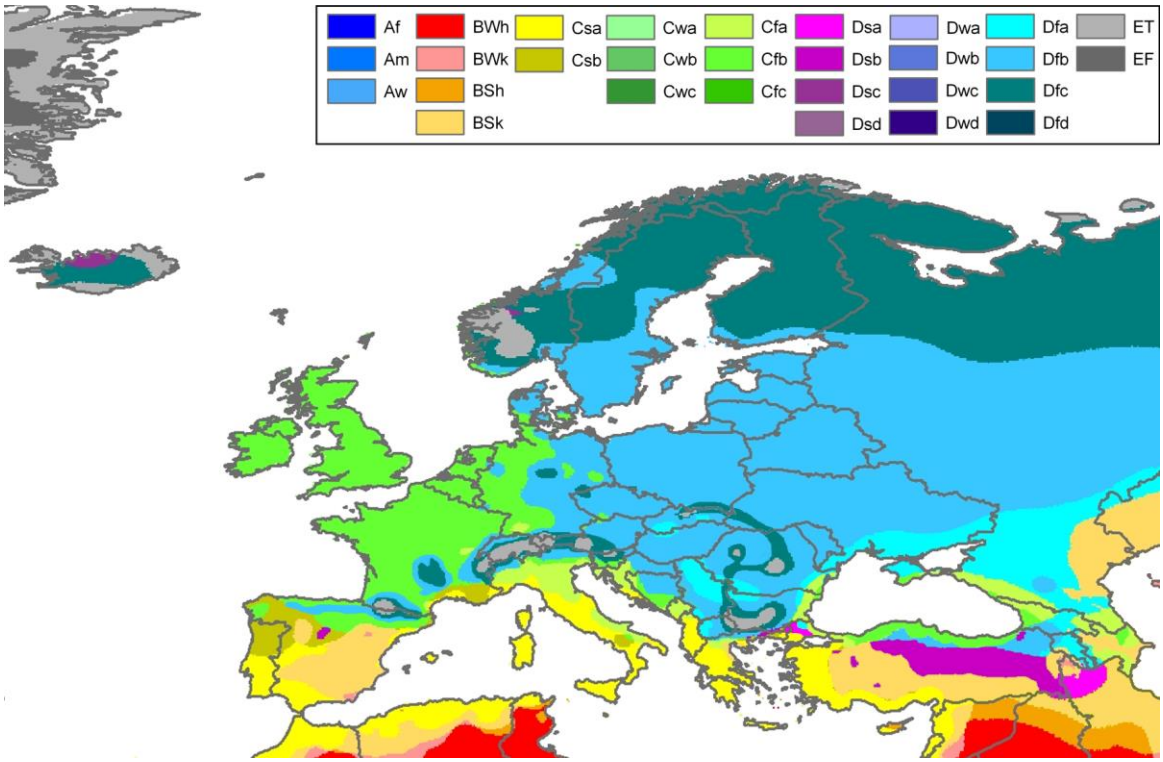
The photographs may be submitted in Spanish or English language. The data base will be carried out only in English language. The digital visual guides will be special numbers of the issue *Professional Plant Protection* and will be written in English. The scientific reviews as well as the technical reviews will be carried out in English language.

II.- APPLICATIONS

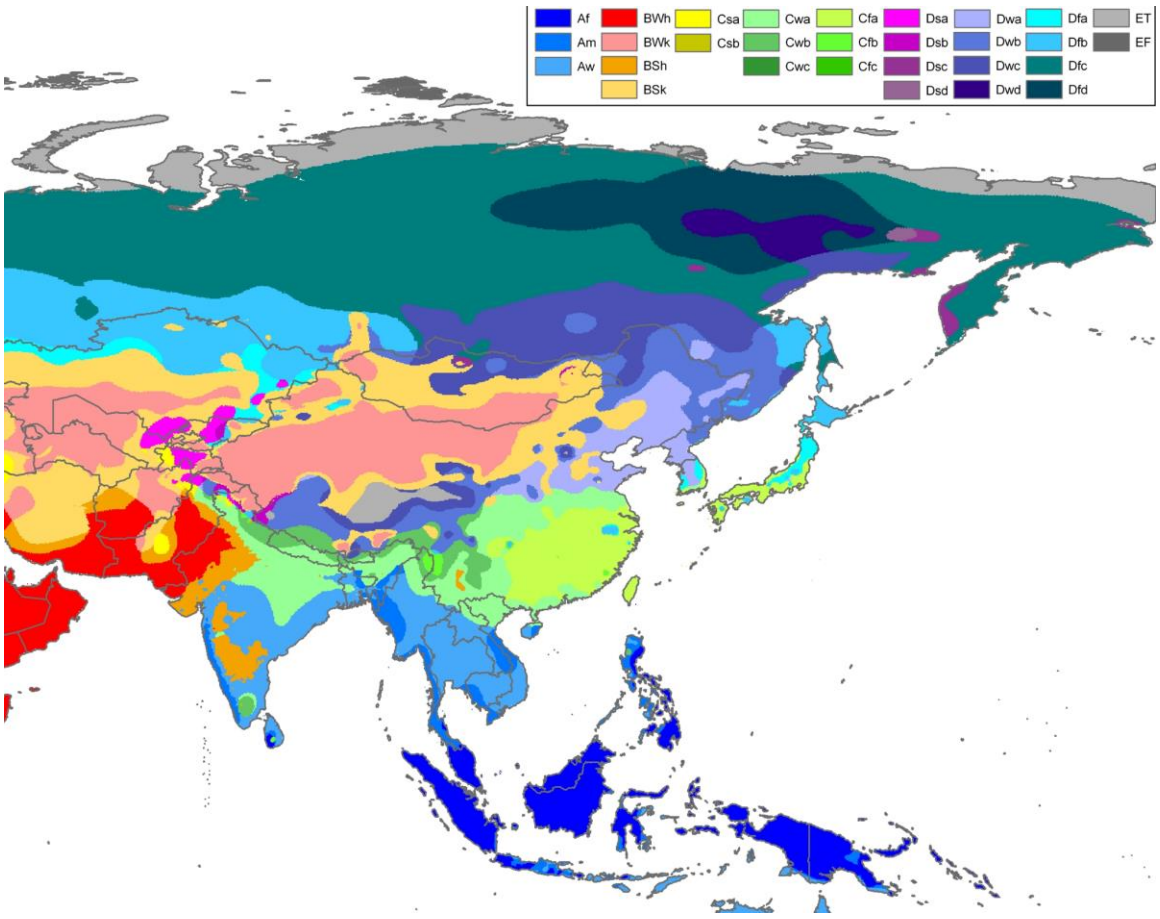
From March 2023 new co-authors and collaborators must request the entry to the GROUP ORNAMENTAL PESTS OF THE WORLD, making a request to J.L. Andrés Ares on the LINKEDIN website, once included on the group they should publish the photographs on the group Linkedin website which will have private access only for members of the group (only for co-authors as well as for members of the editorial board). On the group website the group members may have complete access to the updated plant quarantine data base, free for the members of the group.

The Editorial Board
The director - Dr. J.L. Andrés Ares

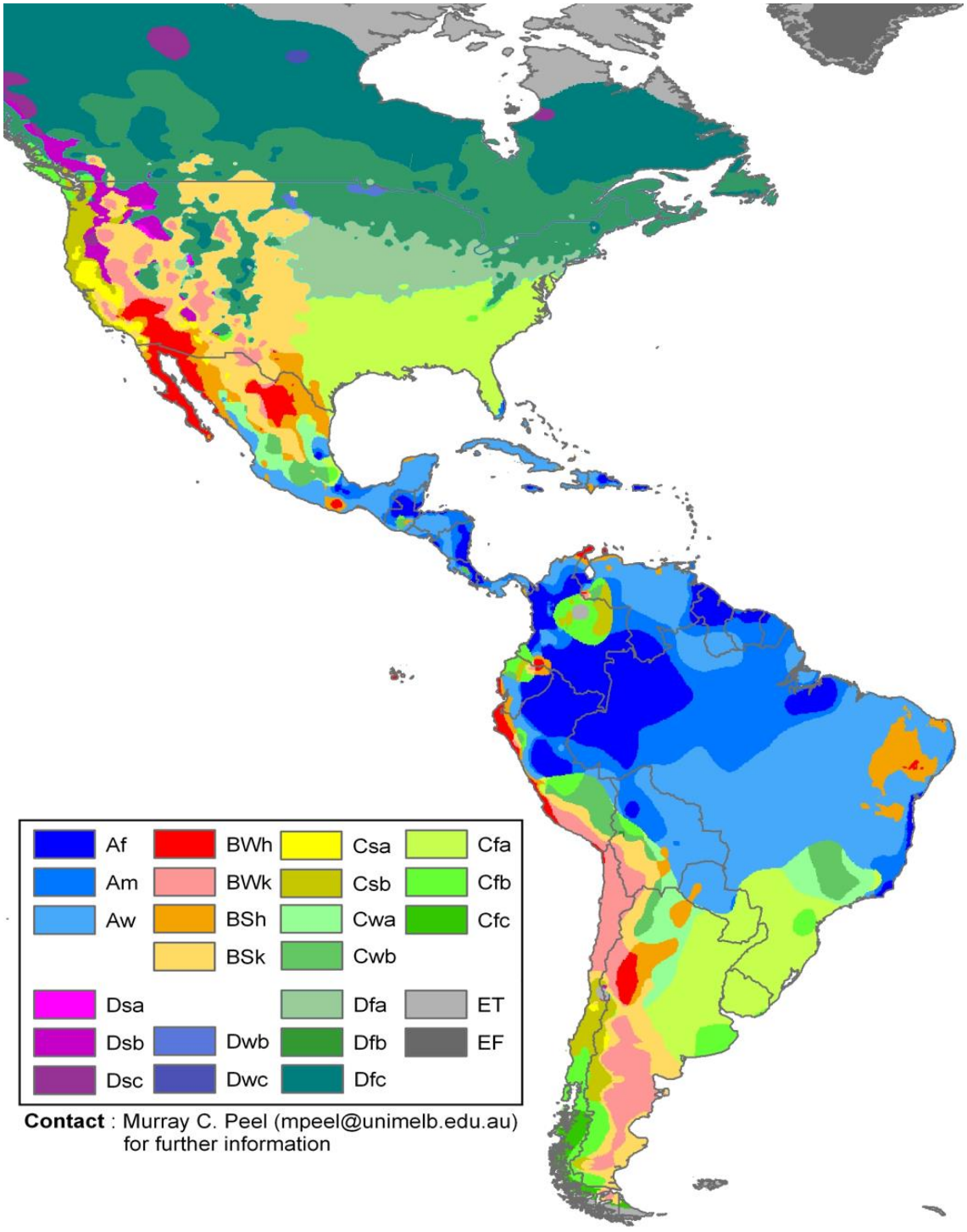
ANNEX II – CLIMATE MAPS



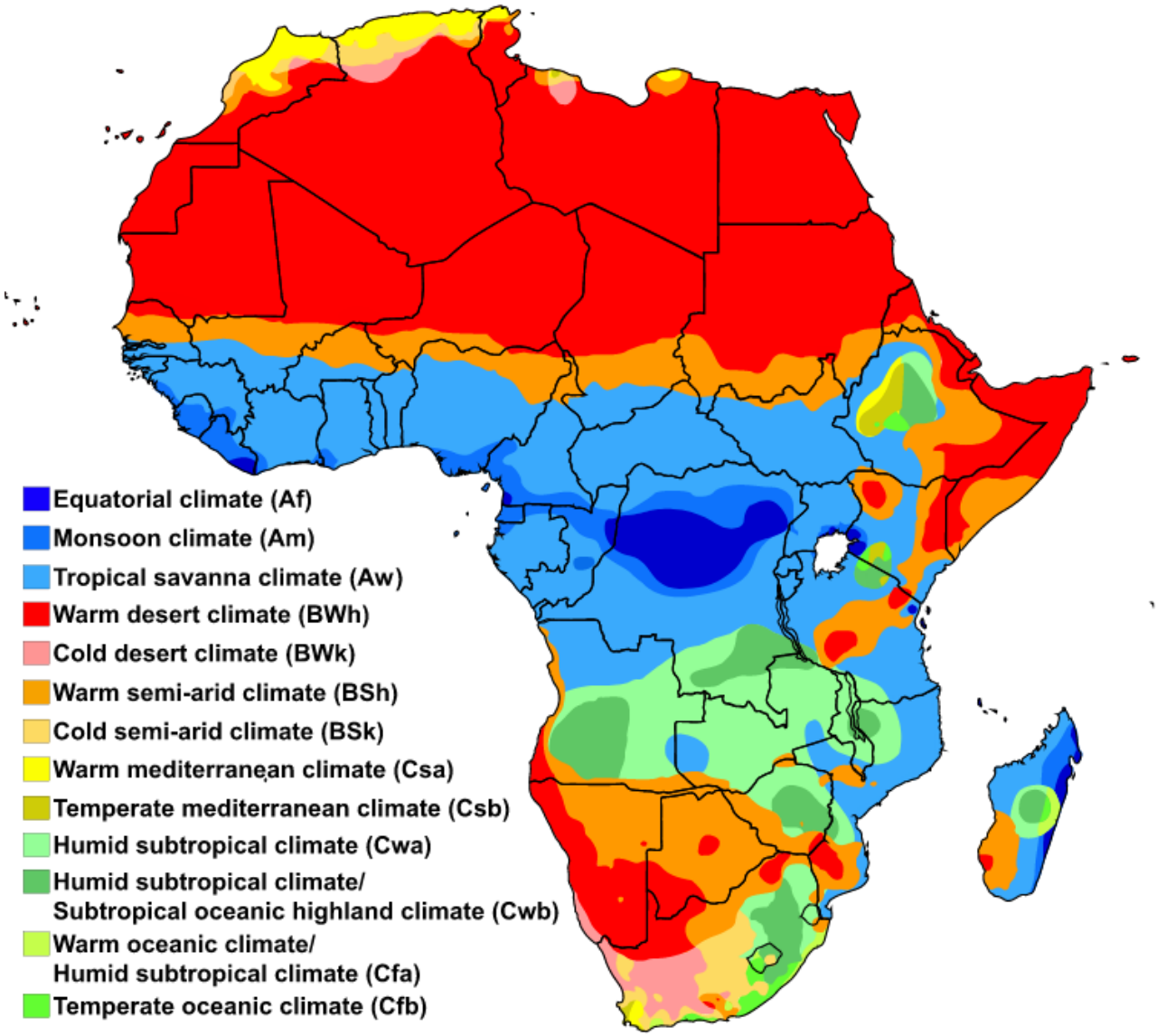
1.-Köppen-Geiger climate type map of Europe. (Peel et al., 2007).



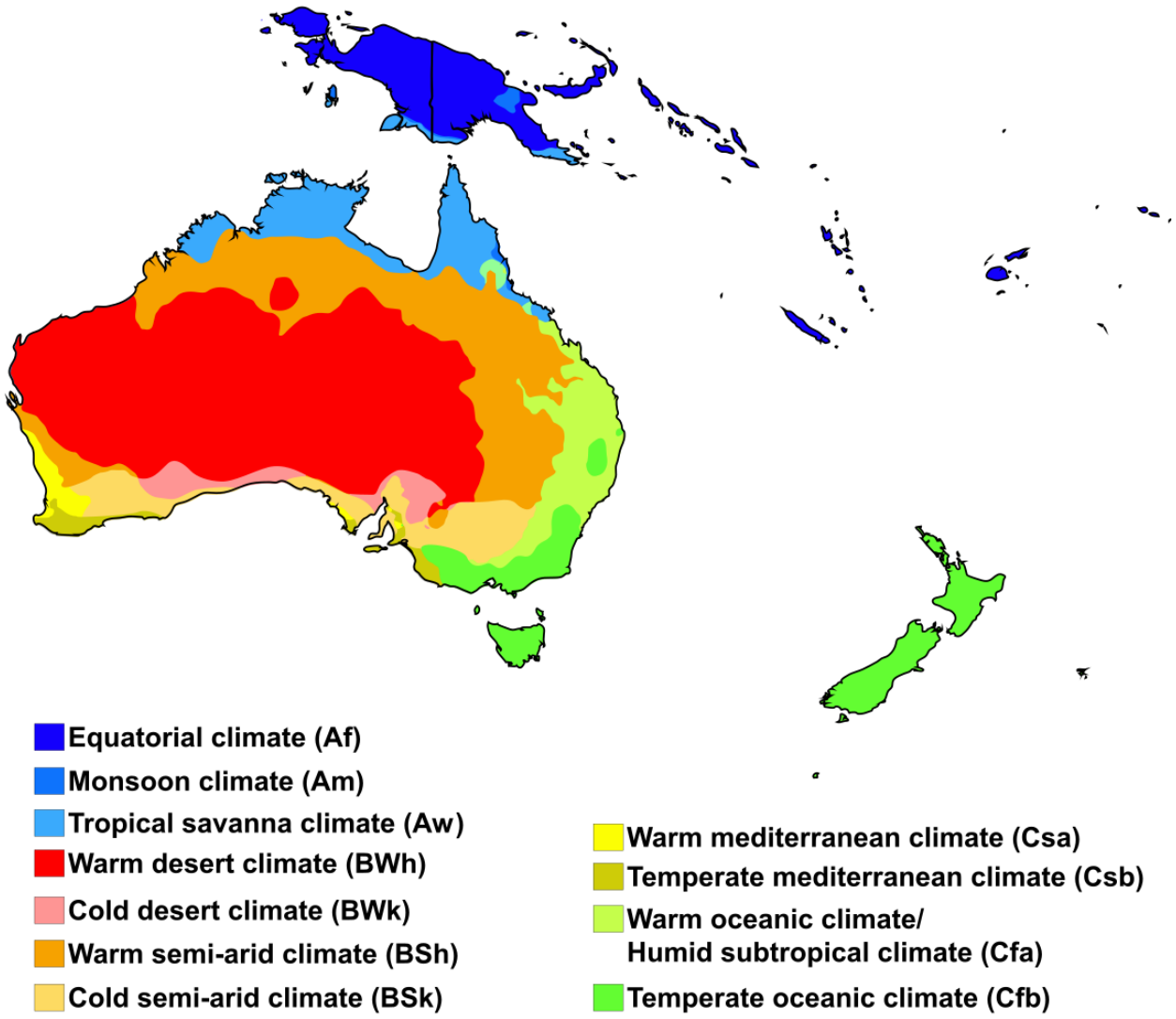
2.-Köppen-Geiger climate type map of Asia. (Peel et al., 2007).



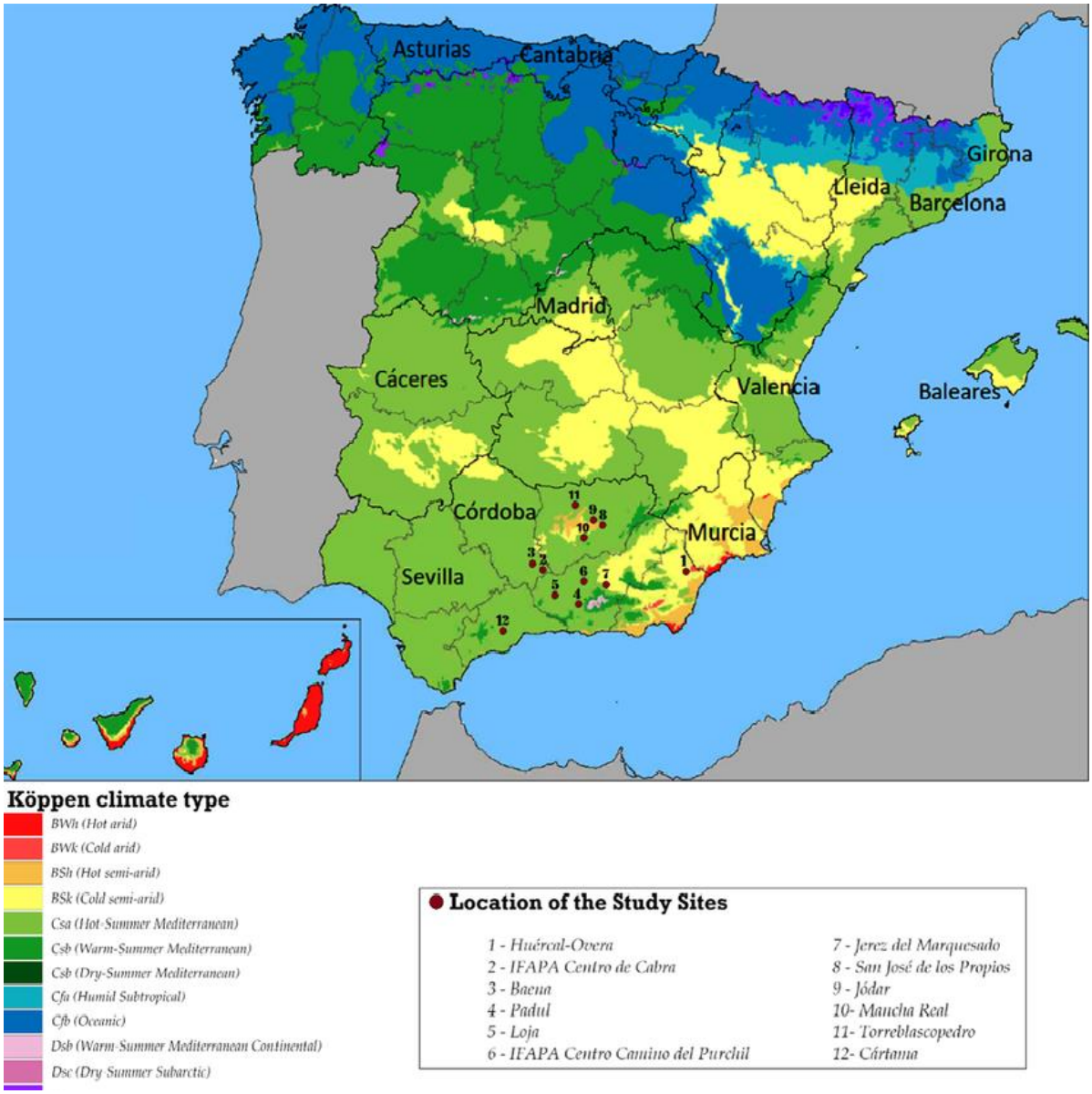
3.-Köppen-Geiger climate type map of America. (Peel et al., 2007).



4.-Köppen-Geiger climate type map of Africa. (Peel et al., 2007).



5.-Köppen-Geiger climate type map of Oceania. (Peel et al., 2007).



6.-Köppen climate type map of Spain. (Chazarra et al., 2022).

ANNEX II – REFERENCES

Chazarra Bernabé, A., Lorenzo Mariño, B., Romero Fresneda, R. & J.V. Romero García. 2022 Evolución de los climas de Köppen en España en el periodo 1951-2020. Nota técnica 37 de AEMET. Ministerio para la Transición Ecológica y el Reto Demográfico Agencia Estatal de Meteorología Madrid, 2022.

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Kocmankova, E., Trnka, M., Juroch, J., Dubrovsky, M., Semeradova, D., Mozny, M.& Z. Zallud. 2009. Impact of climate change on the occurrence and activity of harmful ornamnisms.Plant. Prot. Sci. 45, Special Issue: 48-52.

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