Public Attitudes and Knowledge of Insect Pollinators in Morocco: A Survey-Based Exploration

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This document presents an online questionnaire about the survey, "Public Knowledge and Perceptions Towards Insect Pollinators in Morocco". The survey is designed to ask questions relating to (i) pollinator identification, (ii) pollinator importance, and (iii) pollinator conservation. The survey also included questions pertaining to the demographics of the participants, including age, gender, education level, area (i.e. urban, suburban, or rural), occupation, county of residence, as well as interest in nature and perceived knowledge of pollinators.

Photos included in the survey were taken by I. El Abdouni, and P. LHomme.

Any person currently living in Morocco is welcome to take this survey!

The data collected from this survey will form part of a research project. This is an anonymous survey and any data collected will be used for the purposes of this study only. We also hope that recommendations from this survey will feed into the national pollinator strategy and action plan of Morocco and the African Pollinator Initiative.

The entire survey will take approximatively 15 minutes to complete. Please read through each question carefully.

If you have any questions or concerns about this survey, please email Rachid Sabbahi at r.sabbahi@uiz.ac.ma

Thank you so much for your participation! Your feedback is important to us.

* Required

Background information
Pollination occurs when pollen is carried from one flowering plant to another, allowing the plant to produce viable seeds and fruits. Pollination is carried out by many species of animals, but mostly insects, known as “pollinators”.

Section S1

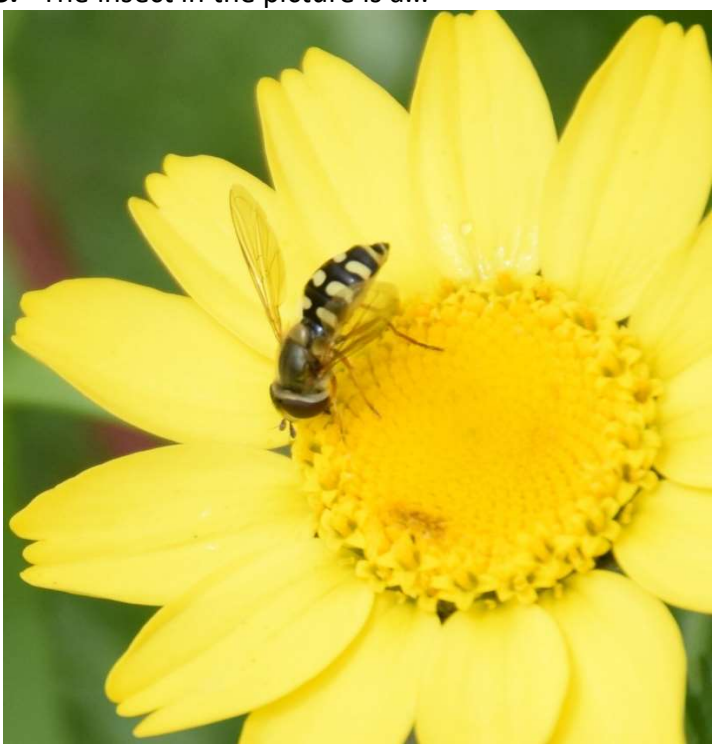
1. How would you rank your interest in nature? *
Mark only one oval.
- ⬭ Not at all interested
- ⬭ Not very interested
- ⬭ Somewhat interested
- ⬭ Very interested

2. How would you rank your knowledge about pollinators? *
Mark only one oval.
- ⬭ Not at all knowledgeable
- ⬭ Not very knowledgeable
- ⬭ Somewhat knowledgeable
- ⬭ Very knowledgeable

Section S2
Please answer the questions below to the best of your ability - If you don't know the answer, give us your best guess!

Please identify the insects in the following photos using the available options from the drop-down menus.

3. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly
- ⬭ Honey bee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

4. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly
- ⬭ Honeybee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

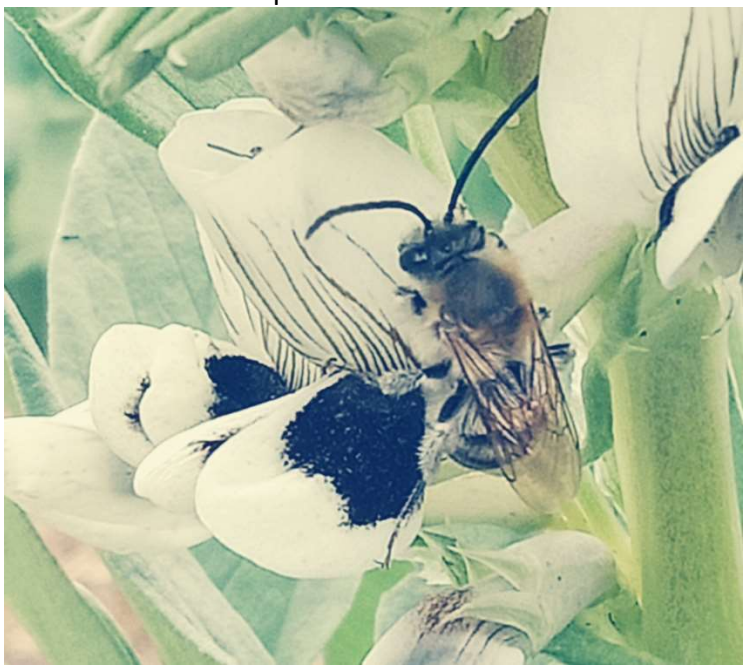
5. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly
- ⬭ Honeybee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

6. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly

- ⬭ Honeybee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

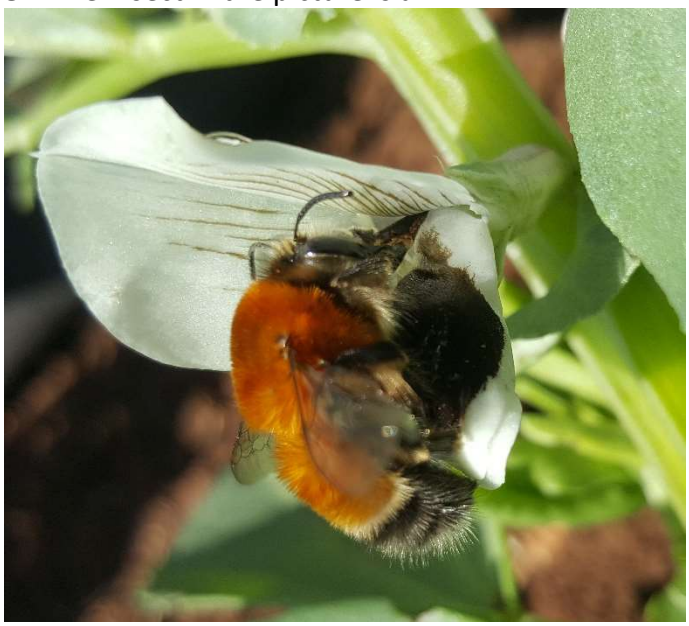
7. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly
- ⬭ Honeybee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

8. The insect in the picture is a... *



Mark only one oval.

- ⬭ Wasp
- ⬭ Fly
- ⬭ Honeybee
- ⬭ Bumblebee
- ⬭ Solitary Bee
- ⬭ Other

Section S3

Please answer the questions below to the best of your ability - If you don't know the answer, give us your best guess!

9. What percentage of the food that we consume do you believe comes from insect pollinated crops? *
Mark only one oval.

- ⬭ 0-25%
- ⬭ 25-50%
- ⬭ 50-75%
- ⬭ 75-100%

10. What percentage of flowering plants do you believe benefit from insect pollination? *
Mark only one oval.

- ⬭ 0-25%
- ⬭ 25-50%
- ⬭ 50-75%
- ⬭ 75-100%

11. What are the potential consequences of pollinator decline? *
Check all that apply.

- ⬭ Food supply problems and shortages
- ⬭ Rising food prices
- ⬭ Decline of animals and plants that depend on these insects for food or reproduction, and loss of biodiversity
- ⬭ No consequence
- ⬭ Other : .....

Section S4

Please answer the questions below to the best of your ability - If you don't know the answer, give us your best guess!

12. Please rate the following insects in terms of their importance to the pollination of Morocco crops and wild plants (1=Not Important; 5=Very Important) *
Mark only one oval per row.

	1	2	3	4	5
Wasps	⬭	⬭	⬭	⬭	⬭
Flies	⬭	⬭	⬭	⬭	⬭
Honeybees	⬭	⬭	⬭	⬭	⬭
Other bees	⬭	⬭	⬭	⬭	⬭

Butterflies + Moths	⬭	⬭	⬭	⬭	⬭
Ants	⬭	⬭	⬭	⬭	⬭
Ladybugs	⬭	⬭	⬭	⬭	⬭

13. How important are insect pollinators for the following crops?
Score 0: no pollinators needed, 1: minor pollinators (0-10%), 2: somewhat important (10-40%), 3: important (40-90%), and 4: very important (more than 90%) *
Mark only one oval per row.

	0	1	2	3	4
Watermelon	⬭	⬭	⬭	⬭	⬭
Apple	⬭	⬭	⬭	⬭	⬭
Faba bean	⬭	⬭	⬭	⬭	⬭
Tomate	⬭	⬭	⬭	⬭	⬭
Wheat	⬭	⬭	⬭	⬭	⬭

Section S5
Please answer the questions below to the best of your ability - If you don't know the answer, give us your best guess!

14. How would you describe the state of wild pollinator populations in Morocco? *
Mark only one oval.

⬭ Increasing
⬭ Steady
⬭ Decreasing

15. Please rate the following feeding habitat type in terms of their importance to insect pollinators (1=Not Important; 5=Very Important) *
Mark only one oval per row.

	1	2	3	4	5
Flower beds or pots	⬭	⬭	⬭	⬭	⬭
Wildflowers	⬭	⬭	⬭	⬭	⬭
Trees	⬭	⬭	⬭	⬭	⬭

16. Please rate the following Nesting and shelter habitat type in terms of their importance to insect pollinators (1=Not Important; 5=Very Important) *
Mark only one oval per row.

	1	2	3	4	5
Bare ground	⬭	⬭	⬭	⬭	⬭
Man-made homes	⬭	⬭	⬭	⬭	⬭
Damp places	⬭	⬭	⬭	⬭	⬭

17. Please rate the following factors in terms of their potential to harm to pollinators (1=Not harmful; 5=Very harmful) *
Mark only one oval per row.

	1	2	3	4	5

Habitat loss	⬭	⬭	⬭	⬭	⬭
Pesticides	⬭	⬭	⬭	⬭	⬭
Invasive species	⬭	⬭	⬭	⬭	⬭
Disease	⬭	⬭	⬭	⬭	⬭
Cell phones	⬭	⬭	⬭	⬭	⬭
Climate change	⬭	⬭	⬭	⬭	⬭

Section S6

Please answer the questions below to the best of your ability - If you don't know the answer, give us your best guess! NOTE: For this question, please choose ONE conservation action per number ranking.

18. Please RANK the following conservation actions in terms of their importance to protecting pollinator populations (1=Least important; 5=Most important) *
Mark only one oval per row.

	1	2	3	4	5
Maintain or create good quality hedgerows	⬭	⬭	⬭	⬭	⬭
Plant nectar and pollen rich trees, shrubs, and flowers	⬭	⬭	⬭	⬭	⬭
Reduce the frequency of mowing to allow wildflowers to grow	⬭	⬭	⬭	⬭	⬭
Create wild pollinator nesting habitat	⬭	⬭	⬭	⬭	⬭
Reduce or eliminate the use of fertilizers and pesticides	⬭	⬭	⬭	⬭	⬭

19. Please RANK the following conservation actions in terms of your willingness to implement them on your property (1=Least willing; 5=Most willing) *
Mark only one oval per row.

	1	2	3	4	5
Maintain or create good quality hedgerows	⬭	⬭	⬭	⬭	⬭
Plant nectar and pollen rich trees, shrubs, and flowers	⬭	⬭	⬭	⬭	⬭
Reduce the frequency of mowing to allow wildflowers to grow	⬭	⬭	⬭	⬭	⬭
Create wild pollinator nesting habitat	⬭	⬭	⬭	⬭	⬭
Reduce or eliminate the use of fertilizers and pesticides	⬭	⬭	⬭	⬭	⬭

Section S7

All demographic information collected from the following questions will remain anonymous and will be used only for the purpose of this study.

20. What is your age? *
Mark only one oval.

- ⬭ Under 25 years old
- ⬭ 26-35 years old
- ⬭ 36-45 years old
- ⬭ 46-55 years old
- ⬭ 56-65 years old
- ⬭ More than 65 years old

21. What is your gender? *
Mark only one oval.

- ⬭ Woman
- ⬭ Man
- ⬭ Prefer not to say

22. What is the highest education level you have completed? *
Mark only one oval.

- ⬭ Primary School Certificate
- ⬭ Secondary Education Certificate
- ⬭ High School Diploma
- ⬭ Higher Technician Certificate
- ⬭ General University Diploma
- ⬭ Bachelor's
- ⬭ Master's
- ⬭ Doctorate (PhD)
- ⬭ Other

23. How would you describe the area where you live? *
Mark only one oval.

- ⬭ Urban (city or town center)
- ⬭ Suburban (outskirts of city, housing estate, or small village)
- ⬭ Rural (countryside)

24. What is your occupation? *
Mark only one oval.

- ⬭ Education
- ⬭ Business
- ⬭ Agriculture/Horticulture
- ⬭ Gardening/Landscaping/Grounds Management
- ⬭ County Councils
- ⬭ Healthcare
- ⬭ Other Public Service
- ⬭ Student
- ⬭ Unemployed
- ⬭ Retired
- ⬭ Other

25. What Region do you reside in? *
Mark only one oval.

- ⬭ Tanger-Tétouan-Al Hoceima
- ⬭ Oriental
- ⬭ Fès-Meknès
- ⬭ Beni Mellal-Khénifra
- ⬭ Rabat-Salé-Kénitra
- ⬭ Casablanca-Settat
- ⬭ Marrakech-Safi
- ⬭ Drâa-Tafilalet
- ⬭ Souss-Massa
- ⬭ Guelmim-Oued Noun
- ⬭ Laâyoune-Sakia El Hamra
- ⬭ Dakhla-Oued Ed Dahab

Thank you for your time in completing this survey!