



Light pollution and Insects

How light pollution impacts insects and the implications for activists

Audience and Project

- Adult environmentalists
- Information will be presented in a short video, easily shared and presented
 - Information transfer from videos can be low, but has the advantage of reach
 - Staying within the expected style and format for informational video help with targeting the audience
 - Video is ultimately designed to encourage collaboration between activist groups, and get people to consider forming broader coalitions

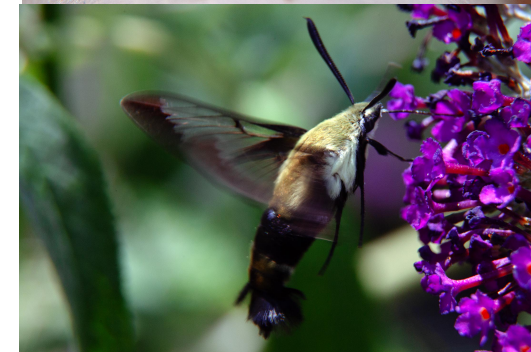
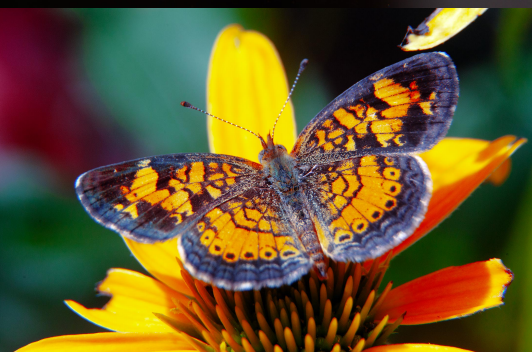
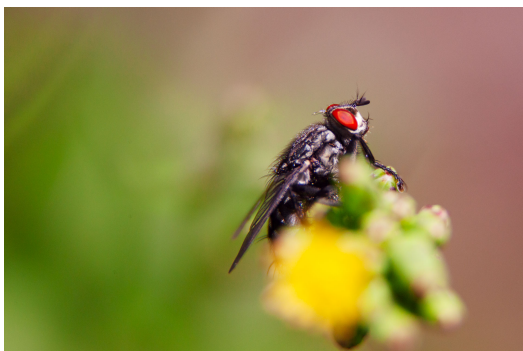
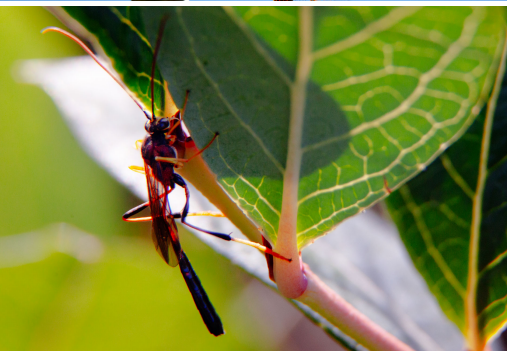
Light pollution

- light trespass
- glare
- skyglow

Insects and why they matter

- Pollination
- Food web/broader ecosystem
- Decomposition
- The inherent uncertainty of disrupting chaotic systems
- The inherent value of life itself and also they're pretty







Impact of light pollution on Humans

- disruption in circadian rhythms
 - more dangerous streets
 - inability to see the stars, for both people on the ground and astronomers
 - aesthetic concerns
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Impact of light pollution on animals and insects

- disruption in circadian rhythms = disruption in circadian rhythms
 - more dangerous streets = predator advantage
 - inability to see the stars = navigation disruptions
 - aesthetic concerns = change in the look of certain plants can reduce pollination rates
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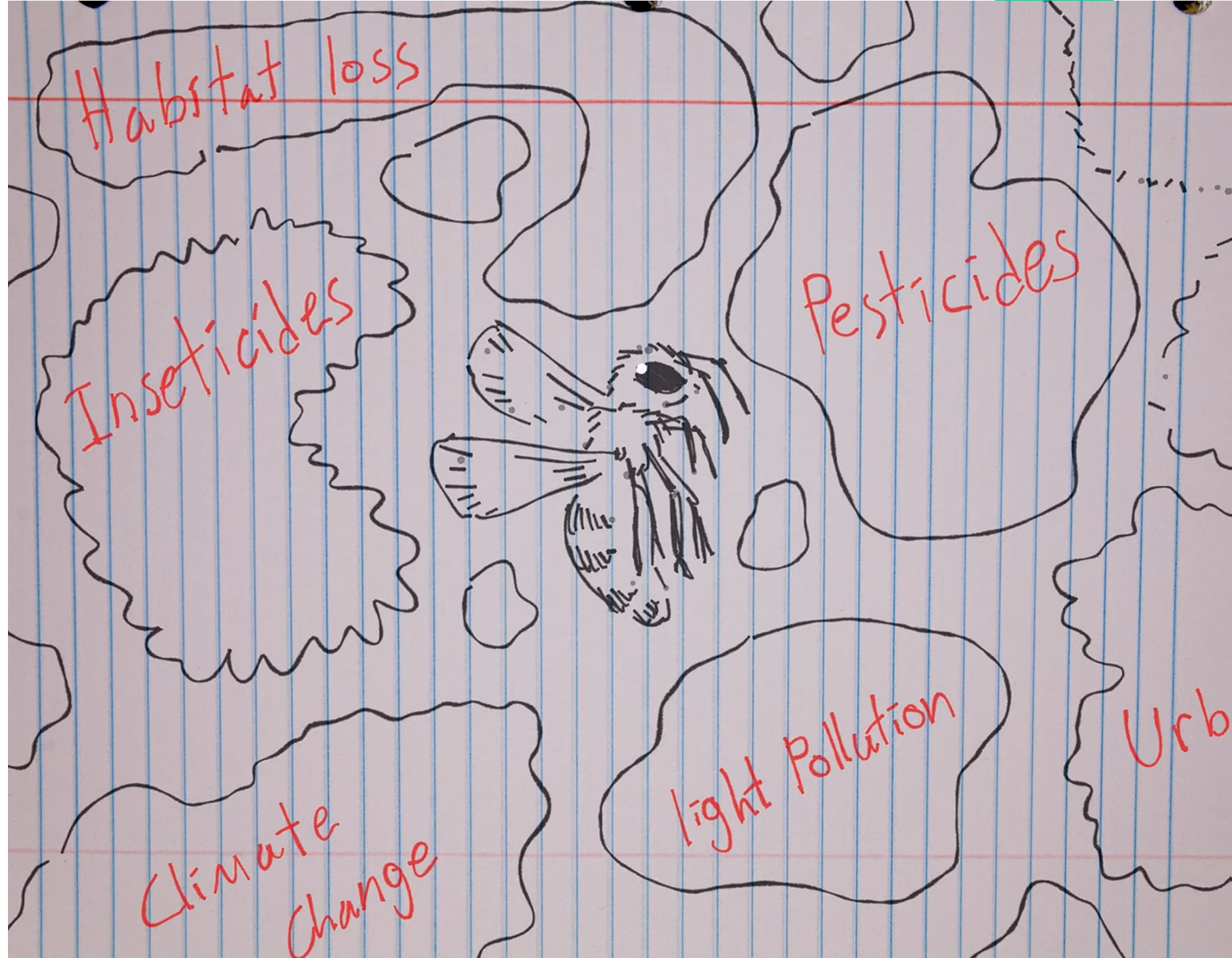
Issues specific to Insects

Artificial light sources can:

- Distract from routines
- Physically exhaust insects
- Alter predator prey balance, such as with spiders building webs around artificial lights
- Compete with bioluminescence, in the case of fireflies
- Compete with still visible navigation reference points such as moonlight
- Repel some insects, although this is currently not well studied



How big is
the
problem?



Halsch, C. A., Elphick, C. S., Bahlai, C. A.,
Forister, M. L., Wagner, D. L., Ware, J. L., &
Grames, E. M. (2025b). Meta-synthesis
reveals interconnections among apparent
drivers of Insect Biodiversity Loss.
BioScience. <https://doi.org/10.1093/biosci/biaf034>

Solutions

- reduce overall light intensity
- warmer lights (too warm is bad for color accuracy)
- more directed lights with less spill
- Dedicated dark areas

Collaboration between dark sky and environmental conservationist groups

- Environmentalists help advocate for dark sky initiatives, and dark sky groups help advocate for broader environmental regulations
- Broader coalitions are able to apply more pressure to local governments



Limitations/Reflection

- Any artificial light, no matter how dim, can still disrupt insect populations
- Disagreements around color temperature
- Limitations of internet video
- Combining skills into one project



Sources

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- Photos by Charles Moodie