

## Light pollution linked to insect loss

28th August, 2021



Scientists have discovered that street lights and other forms of artificial lighting could be behind a decline in insect populations. Researchers from the UK Centre for Ecology and Hydrology conducted studies on

the number of insects living near sources of white light from light-emitting diodes (LEDs). The researchers said LEDs are responsible for disrupting insect behaviour and for causing a drop in their numbers. Lead researcher Douglas Boyes said the results of his study were "eye-opening". He was surprised at the extent of the insect loss due to LEDs. He found a 47 per cent reduction in insect populations at hedgerow test sites and a 37 per cent reduction at roadside grassy areas.

Mr Boyes and his team set up LEDs at 26 roadside sites in the countryside that contained either hedges or grass verges. The researchers counted the numbers of moth caterpillars found at these sites and compared these with insects found at unlit sites. Boyes commented on the difference. He said: "We were really quite taken aback by just how stark it was." He posited that LEDs led to two drastic changes in behaviour. He said the most alarming discovery was that the lights stopped female insects laying eggs in the lit areas. Another disruption was that the lighting disturbed the feeding behaviour of the insects. The caterpillars in the unlit areas were heavier than those in the areas lit by LEDs.

Sources: [phys.org](https://phys.org) / [bbc.com](https://bbc.com) / [msn.com](https://msn.com)

### Writing

We should reduce artificial lighting around the world to help insects. Discuss.

### Chat

Talk about these words from the article.

scientists / street lights / artificial / lighting / LEDs / insects / study / hedgerow / team / grass / moth / caterpillars / changes / behaviour / female / behaviour / unlit

### True / False

- 1) Scientists say artificial lighting is cutting numbers of insects. T / F
- 2) A scientist said blue light is the biggest culprit in harming insects. T / F
- 3) The researcher said people needed to open their eyes regarding insects. T / F
- 4) The researcher said LEDs led to a 47% decline in insects at hedgerows. T / F
- 5) Researchers counted the numbers of butterfly caterpillars. T / F
- 6) A researcher said his findings did not surprise him. T / F
- 7) The researcher said LED lighting stopped insects laying eggs. T / F
- 8) Caterpillars were heavier in places with no LED lighting. T / F

### Synonym Match

(The words in **bold** are from the news article.)

- |                       |                |
|-----------------------|----------------|
| 1. <b>artificial</b>  | a. shocked     |
| 2. <b>decline</b>     | b. scale       |
| 3. <b>conducted</b>   | c. amazing     |
| 4. <b>eye-opening</b> | d. disturbance |
| 5. <b>extent</b>      | e. fall        |
| 6. <b>set up</b>      | f. illuminated |
| 7. <b>counted</b>     | g. established |
| 8. <b>taken aback</b> | h. manmade     |
| 9. <b>disruption</b>  | i. added up    |
| 10. <b>lit</b>        | j. carried out |

### Discussion – Student A

- a) What do you think about what you read?
- b) What role do moths play in nature?
- c) How do caterpillars transform into moths and butterflies?
- d) What would it be like to be an insect researcher?
- e) What three adjectives best describe this story?
- f) Can you sleep if there is artificial light?
- g) Should we have street lights and other artificial lighting?
- h) What questions would you like to ask the researchers?

## Phrase Match

- |  |                             |
|--|-----------------------------|
| 1. street lights and other forms of artificial | a. behaviour of the insects |
| 2. a decline                                   | b. "eye-opening"            |
| 3. insects living near                         | c. laying eggs              |
| 4. the results of his study were               | d. of the insect loss       |
| 5. He was surprised at the extent              | e. in insect populations    |
| 6. We were really quite taken                  | f. in behaviour             |
| 7. two drastic changes                         | g. sources of white light   |
| 8. the lights stopped female insects           | h. were heavier             |
| 9. lighting disturbed the feeding              | i. aback                    |
| 10. caterpillars in the unlit areas            | j. lighting                 |

## Discussion – Student B

- What do you think of light pollution?
- What harm does light pollution do?
- In what ways does light pollution affect you?
- Why might artificial light harm insects and other creatures?
- What happens when the numbers of insects fall?
- Should we reduce the amount of artificial lighting?
- What do you think of bright, city lights?
- What do you think of insects?

## Spelling

- other forms of ictlrafaii lighting
- behind a neidcel in insect populations
- white light from light-emtitniq diodes
- ndurigptsi insect behaviour
- surprised at the eettnx of the insect loss
- insect populations at hodreegw test sites
- contained either hedges or grass gevres
- He ioeptds that
- LEDs led to two crasitd changes
- the most aargniml discovery
- lighting udedsirbt the feeding behaviour
- iarrctalleps in the unlit areas

### Answers – Synonym Match

1. h	2. e	3. j	4. c	5. b
6. g	7. i	8. a	9. d	10. f

## Role Play

### Role A – Ants

You think ants are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): worms, bees or spiders.

### Role B – Worms

You think worms are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): ants, bees or spiders.

### Role C – Bees

You think bees are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): worms, ants or spiders.

### Role D – Spiders

You think spiders are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): worms, bees or ants.

## Speaking – Insects

Rank these with your partner. Put the best insects at the top. Change partners often and share your rankings.

- |               |             |
|---------------|-------------|
| • Moths       | • Beetles   |
| • Ants        | • Bees      |
| • Worms       | • Spiders   |
| • Dragonflies | • Ladybirds |

### Answers – True False

1 T	2 F	3 F	4 T	5 F	6 F	7 T	8 T
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Answers to Phrase Match and Spelling are in the text.