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Level 6 – 28th August, 2021

Light pollution linked to insect loss

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<https://breakingnewsenglish.com/2108/210828-insect-loss.html>

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Please try Levels 4 and 5 (they are easier).

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THE ARTICLE

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

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: <https://phys.org/news/2021-08-streetlights-contribute-insect-population-declines.html>
<https://www.bbc.com/news/science-environment-58333233>
<https://www.msn.com/en-us/news/technology/led-streetlights-contribute-to-insect-population-declines-study/ar-AANJSIE>

WARM-UPS

1. INSECT LOSS: Students walk around the class and talk to other students about insect loss. Change partners often and share your findings.

2. CHAT: In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

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

Have a chat about the topics you liked. Change topics and partners frequently.

3. STREET LIGHTS: Students A **strongly** believe the number of street lights should be reduced; Students B **strongly** believe the opposite. Change partners again and talk about your conversations.

4. THREATS: How do these things threaten insects? What can we do to help insects? Complete this table with your partner(s). Change partners often and share what you wrote.

	Threats	What We Can Do
Light		
Pesticides		
Habitat loss		
Invasive species		
Climate change		
Human activity		

5. CATERPILLAR: Spend one minute writing down all of the different words you associate with the word "caterpillar". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

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

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

VOCABULARY MATCHING

Paragraph 1

- | | |
|---------------|---|
| 1. form | a. A gradual and continuous loss of strength, numbers, or value. |
| 2. artificial | b. Interrupting an event, activity, or process by causing a disturbance or problem. |
| 3. decline | c. The particular way in which a thing exists or appears. |
| 4. hydrology | d. Made or produced by human beings rather than occurring naturally, especially as a copy of something natural. |
| 5. diode | e. The branch of science concerned with the earth's water. |
| 6. disrupting | f. A semiconductor device. |
| 7. extent | g. The size or scale of something. |

Paragraph 2

- | | |
|-----------------|---|
| 8. hedge | h. Put forward as fact or as a basis for argument. |
| 9. verge | i. A fence or boundary formed by closely growing bushes or shrubs. |
| 10. taken aback | j. Unpleasantly or sharply clear. |
| 11. stark | k. Likely to have a strong or far-reaching effect; radical and extreme. |
| 12. posited | l. A grass edging such as that by the side of a road or path. |
| 13. drastic | m. Getting regular nourishment from a particular substance. |
| 14. feeding | n. Shock or surprise someone. |

BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

1. TRUE / FALSE: Read the headline. Guess if a-h below are true (T) or false (F).

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**

2. SYNONYM MATCH: (The words in **bold** are from the news article.)

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

3. PHRASE MATCH: (Sometimes more than one choice is possible.)

- | | |
|--|-----------------------------|
| 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 |

GAP FILL

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Scientists have discovered that street lights and other forms of (1) _____ lighting could be behind a decline in insect populations. Researchers from the UK Centre for Ecology and Hydrology (2) _____ studies on the number of insects living near (3) _____ of white light from light-emitting diodes (LEDs). The researchers said LEDs are responsible for (4) _____ insect behaviour and for causing a drop in their (5) _____. Lead researcher Douglas Boyes said the results of his study were "eye-(6) _____". He was surprised at the (7) _____ 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 (8) _____ at roadside grassy areas.

disrupting
opening
conducted
reduction
artificial
extent
sources
numbers

Mr Boyes and his team set up LEDs at 26 (9) _____ sites in the countryside that contained either hedges or grass verges. The researchers counted the numbers of (10) _____ caterpillars found at these sites and (11) _____ these with insects found at unlit sites. Boyes commented on the difference. He said: "We were really quite taken (12) _____ by just how stark it was." He (13) _____ that LEDs led to two drastic changes in behaviour. He said the most alarming (14) _____ was that the lights stopped female insects laying eggs in the lit areas. Another (15) _____ was that the lighting disturbed the (16) _____ behaviour of the insects. The caterpillars in the unlit areas were heavier than those in the areas lit by LEDs.

compared
posited
feeding
moth
aback
disruption
roadside
discovery

LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

- 1) Scientists have discovered that street lights and other _____ lighting
 - a. forms of art official
 - b. forms of arty fissure
 - c. forms of artificial
 - d. forms of are typical
- 2) responsible for disrupting insect behaviour and for causing a _____ numbers
 - a. drip in their
 - b. droop in their
 - c. drop in their
 - d. drape in their
- 3) Lead researcher Douglas Boyes said the results of his study _____
 - a. were eye-opening
 - b. were eyes-opening
 - c. were eyed-opening
 - d. were eying-opening
- 4) surprised at the extent of the insect loss due to LEDs. He found a 47 _____
 - a. per cent redaction
 - b. per cent reed action
 - c. per cent red ducting
 - d. per cent reduction
- 5) populations at hedgerow test sites and a 37 per cent reduction at _____
 - a. roadside grassy arenas
 - b. roadside grassy auras
 - c. roadside grassy auroras
 - d. roadside grassy areas
- 6) set up LEDs at 26 roadside sites in the countryside that contained either hedges _____
 - a. or grass dirges
 - b. or grass birdies
 - c. or grass verges
 - d. or grass burgers
- 7) Boyes commented on the difference. He said: "We were really _____"
 - a. quite taken back
 - b. quite take inner back
 - c. quite take a back
 - d. quite taken aback
- 8) He said the most alarming discovery was that the lights stopped female _____
 - a. insects lain eggs
 - b. insects lay in eggs
 - c. insects layering eggs
 - d. insects laying eggs
- 9) Another disruption was that the lighting disturbed _____
 - a. the feed din behaviour
 - b. the feed in behaviour
 - c. the feeding behaviour
 - d. the feed ding behaviour
- 10) The caterpillars in the unlit areas were heavier than those in the areas _____
 - a. bit by LEDs
 - b. lit by LEDs
 - c. writ by LEDs
 - d. slit by LEDs

LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Scientists have discovered that street lights and other (1) _____ lighting could be behind a decline in insect populations. Researchers from the UK Centre for Ecology and Hydrology (2) _____ the number of insects living near sources of white light from (3) _____ (LEDs). The researchers said LEDs are responsible for disrupting insect behaviour and for (4) _____ in their numbers. Lead researcher Douglas Boyes said the results of his study were "eye-opening". He was surprised at the (5) _____ 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 (6) _____.

Mr Boyes and his (7) _____ LEDs at 26 roadside sites in the countryside that contained either hedges (8) _____. The researchers counted the numbers of moth caterpillars found at these sites and compared these with insects found (9) _____. Boyes commented on the difference. He said: "We were really quite taken aback by just (10) _____ 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 (11) _____ the lighting disturbed the (12) _____ the insects. The caterpillars in the unlit areas were heavier than those in the areas lit by LEDs.

COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

1. What might be behind a fall in insect numbers besides street lights?
2. What colour light is causing a decline in insect numbers?
3. Who is Douglas Boyes?
4. What did a researcher say the results of his study were?
5. How much did insect populations decline at lit roadside grassy areas?
6. How many sites did the researchers set up beside roads?
7. What kind of insects did the researchers count?
8. How many drastic changes in behaviour did a researcher find?
9. What did LED lights stop female insects doing?
10. Where were caterpillars heaviest?

MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

- 1) What might be behind a fall in insect numbers besides street lights?
 - a) climate change
 - b) pesticides
 - c) artificial lighting
 - d) other insects
- 2) What colour light is causing a decline in insect numbers?
 - a) white
 - b) blue
 - c) red
 - d) yellow
- 3) Who is Douglas Boyes?
 - a) the lead researcher
 - b) a butterfly collector
 - c) a gardener
 - d) an insect exterminator
- 4) What did a researcher say the results of his study were?
 - a) great
 - b) eye-opening
 - c) as expected
 - d) mind-boggling
- 5) How much did insect populations decline at lit roadside grassy areas?
 - a) by 27%
 - b) by 26%
 - c) by 47%
 - d) by 37%
- 6) How many sites did the researchers set up beside roads?
 - a) 37
 - b) 26
 - c) 15
 - d) 47
- 7) What kind of insects did the researchers count?
 - a) moth caterpillars
 - b) ladybirds
 - c) worms
 - d) ants
- 8) How many drastic changes in behaviour did a researcher find?
 - a) three
 - b) one
 - c) two
 - d) four
- 9) What did LED lights stop female insects doing?
 - a) eating
 - b) breeding
 - c) growing
 - d) laying eggs
- 10) Where were caterpillars heaviest?
 - a) in unlit areas
 - b) in the north
 - c) in the south
 - d) in wet areas

ROLE PLAY

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

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.

AFTER READING / LISTENING

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

1. WORD SEARCH: Look in your dictionary / computer to find collocates, other meanings, information, synonyms ... for the words 'light' and 'pollution'.

light	pollution
--------------	------------------

- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

2. ARTICLE QUESTIONS: Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

3. GAP FILL: In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the activity. Were they new, interesting, worth learning...?

4. VOCABULARY: Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

5. TEST EACH OTHER: Look at the words below. With your partner, try to recall how they were used in the text:

<ul style="list-style-type: none">• forms• sources• drop• eye• due• 37	<ul style="list-style-type: none">• 26• moth• difference• two• female• heavier
---	---

INSECTS SURVEY

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Write five GOOD questions about insects in the table. Do this in pairs. Each student must write the questions on his / her own paper.

When you have finished, interview other students. Write down their answers.

	STUDENT 1 _____	STUDENT 2 _____	STUDENT 3 _____
Q.1.			
Q.2.			
Q.3.			
Q.4.			
Q.5.			

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

INSECTS DISCUSSION

STUDENT A's QUESTIONS (Do not show these to student B)

1. What did you think when you read the headline?
2. What images are in your mind when you hear the word 'light'?
3. What do you think of light pollution?
4. What harm does light pollution do?
5. In what ways does light pollution affect you?
6. Why might artificial light harm insects and other creatures?
7. What happens when the numbers of insects fall?
8. Should we reduce the amount of artificial lighting?
9. What do you think of bright, city lights?
10. What do you think of insects?

Light pollution linked to insect loss – 28th August, 2021
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INSECTS DISCUSSION

STUDENT B's QUESTIONS (Do not show these to student A)

11. Did you like reading this article? Why/not?
12. What do you think of when you hear the word 'pollution'?
13. What do you think about what you read?
14. What role do moths play in nature?
15. How do caterpillars transform into moths and butterflies?
16. What would it be like to be an insect researcher?
17. What three adjectives best describe this story?
18. Can you sleep if there is artificial light?
19. Should we have street lights and other artificial lighting?
20. What questions would you like to ask the researchers?

DISCUSSION (Write your own questions)

STUDENT A's QUESTIONS (Do not show these to student B)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

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DISCUSSION (Write your own questions)

STUDENT B's QUESTIONS (Do not show these to student A)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

LANGUAGE - CLOZE

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Scientists have discovered that street lights and other (1) _____ of artificial lighting could be behind a decline (2) _____ insect populations. Researchers from the UK Centre for Ecology and Hydrology (3) _____ studies on the number of insects living near sources of white light from light-emitting diodes (LEDs). The researchers said LEDs are responsible for (4) _____ 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 (5) _____ 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 (6) _____ areas.

Mr Boyes and his team set up LEDs at 26 roadside sites in the countryside that contained either hedges or grass (7) _____. The researchers counted the numbers of moth caterpillars found at these sites and compared these with insects found at unlit sites. Boyes commented (8) _____ the difference. He said: "We were really quite taken aback by just how (9) _____ it was." He posited that LEDs led to two drastic changes in behaviour. He said the most (10) _____ discovery was that the lights stopped female insects (11) _____ eggs in the lit areas. Another disruption was that the lighting disturbed the (12) _____ behaviour of the insects. The caterpillars in the unlit areas were heavier than those in the areas lit by LEDs.

Put the correct words from the table below in the above article.

- | | | | | |
|-----|------------------|-------------------|------------------|----------------|
| 1. | (a) farms | (b) firms | (c) forms | (d) foams |
| 2. | (a) in | (b) on | (c) at | (d) by |
| 3. | (a) conducted | (b) composed | (c) orchestrated | (d) attuned |
| 4. | (a) disrupting | (b) disrespecting | (c) distributing | (d) distancing |
| 5. | (a) tentative | (b) extent | (c) embargo | (d) chaos |
| 6. | (a) aghast | (b) gassy | (c) glassy | (d) grassy |
| 7. | (a) convergences | (b) adverse | (c) verges | (d) vengeance |
| 8. | (a) at | (b) by | (c) of | (d) on |
| 9. | (a) stark | (b) strict | (c) stock | (d) stork |
| 10. | (a) dozing | (b) alarming | (c) slumbering | (d) snoozing |
| 11. | (a) slaying | (b) laying | (c) playing | (d) allaying |
| 12. | (a) feeds | (b) feed | (c) feeding | (d) fodder |

SPELLING

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Paragraph 1

1. other forms of ictlrafaii lighting
2. behind a neidcel in insect populations
3. white light from light-emtitnig diodes
4. ndurigptsi insect behaviour
5. surprised at the eettnx of the insect loss
6. insect populations at hodreegw test sites

Paragraph 2

7. contained either hedges or grass gevres
8. He ioeptds that
9. LEDs led to two crasitd changes
10. the most aargniml discovery
11. lighting udedsirbt the feeding behaviour
12. iarrctalleps in the unlit areas

PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Number these lines in the correct order.

- () behaviour of the insects. The caterpillars in the unlit areas were heavier than those in the areas lit by LEDs.
- () to two drastic changes in behaviour. He said the most alarming discovery was that the lights stopped female
- () difference. He said: "We were really quite taken aback by just how stark it was." He posited that LEDs led
- () or grass verges. The researchers counted the numbers of moth caterpillars found at these
- (**1**) 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
- () sites and compared these with insects found at unlit sites. Boyes commented on the
- () a drop in their numbers. Lead researcher Douglas Boyes said the results of his study were
- () 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
- () Mr Boyes and his team set up LEDs at 26 roadside sites in the countryside that contained either hedges
- () reduction in insect populations at hedgerow test sites and a 37 per cent reduction at roadside grassy areas.
- () "eye-opening". He was surprised at the extent of the insect loss due to LEDs. He found a 47 per cent
- () insects laying eggs in the lit areas. Another disruption was that the lighting disturbed the feeding

PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

lights forms artificial lighting . of Street other and

near white The insects of number light . living

are disrupting LEDs behaviour . responsible for insect

of the loss . Surprised the at extent insect

grassy reduction 37 A percent roadside areas . at

The moth numbers the researchers counted caterpillars . of

how stark aback Taken was . by it just

The laying female eggs . lights insects stopped

of Lighting the the feeding behaviour disturbed insects .

The caterpillars unlit the were in areas heavier .

CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Scientists have discovered that street lights and *another / other* forms of artificial lighting could be behind a decline *on / in* insect populations. Researchers from the UK Centre for Ecology and Hydrology *orchestrated / conducted* studies on the *number / numeral* of insects living near sources of white light from light-emitting *dioxide / diodes* (LEDs). The researchers said LEDs are responsible for disrupting insect behaviour and for *causing / casing* a drop in their numbers. Lead researcher Douglas Boyes said the *resultant / results* of his study were "eye-opening". He was surprised *at / to* the extent of the insect loss *because / 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 / auras*.

Mr Boyes and his team set *down / up* LEDs at 26 roadside sites in the countryside that contained either hedges *or / nor* grass verges. The researchers counted the numbers of *mouth / moth* caterpillars found at these sites and compared *them / these* with insects found at unlit sites. Boyes commented on the difference. He said: "We were really quite taken *aback / back* by just how stark it was." He posited that LEDs led to two *drastic / caustic* changes in behaviour. He said the most *snoozing / alarming* discovery was that the lights stopped female insects *laying / lain* eggs in the lit areas. Another disruption was that the lighting disturbed the *foodie / feeding* behaviour of the insects. The caterpillars in the unlit areas were heavier than those in the areas *unlit / lit* by LEDs.

Talk about the connection between each pair of words in italics, and why the correct word is correct.

INSERT THE VOWELS (a, e, i, o, u)

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Sc__nt_sts h_v_ d_sc_v_r_d th_t str__t l_ghts _nd
_th_r f_rms _f _rt_f_c__l l_ght_ng c__ld b_ b_h_nd _
d_cl_n_ _n _ns_ct p_p_l_t__ns. R_s__rch_rs fr_m th_
_K C_ntr_ f_r _c_l_gy _nd Hydr_l_gy c_nd_ct_d st_d__s
n th n_mb_r _f _ns_cts l_v_ng n__r s__rc_s _f
wh_t_ l_ght fr_m l_ght-m_tt_ng d__d_s (L_Ds). Th_
r_s__rch_rs s__d L_Ds _r_ r_sp_ns_bl_ f_r d_sr_pt_ng
_ns_ct b_h_v__r _nd f_r c__s_ng _ dr_p _n th__r
n_mb_rs. L__d r_s__rch_r D__gl_s B_y_s s__d th_
r_s_lts _f h_s st_dy w_r_ "y_-__p_n_ng". H_ w_s
s_rpr_s_d _t th_ _xt_nt _f th_ _ns_ct l_ss d__ t_
L_Ds. H_ f__nd _ 47 p_r c_nt r_d_ct__n _n _ns_ct
p_p_l_t__ns _t h_dg_r_w t_st s_t_s _nd _ 37 p_r c_nt
r_d_ct__n _t r__ds_d_ gr_ssy _r__s.

Mr B_y_s _nd h_s t__m s_t _p L_Ds _t 26 r__ds_d_
s_t_s _n th_ c__ntrys_d_ th_t c_nt__n_d __th_r h_dg_s
_r gr_ss v_rg_s. Th_ r_s__rch_rs c__nt_d th_ n_mb_rs
_f m_th c_t_rp_ll_rs f__nd _t th_s_ s_t_s _nd
c_mpr_d th_s_ w_th _ns_cts f__nd _t _nl_t s_t_s.
B_y_s c_mmnt_d _n th_ d_ff_r_nc_. H_ s__d: "W_
w_r_ r__lly q__t_ t_k_n _b_ck by j_st h_w st_rk _t
w_s." H_ p_s_t_d th_t L_Ds l_d t_ tw_ dr_st_c
ch_ng_s _n b_h_v__r. H_ s__d th_ m_st _l_rm_ng
d_sc_v_ry w_s th_t th_ l_ghts st_pp_d f_m_l_ _ns_cts
l_y_ng _ggs _n th_ l_t _r__s. _n_th_r d_sr_pt__n w_s
th_t th_ l_ght_ng d_st_rb_d th_ f__d_ng b_h_v__r _f
th_ _ns_cts. Th_ c_t_rp_ll_rs _n th_ _nl_t _r__s w_r_
h__v__r th_n th_s_ _n th_ _r__s l_t by L_Ds.

PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

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 lightemitting 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 eyeopening 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

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

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.

FREE WRITING

From <https://breakingnewsenglish.com/2108/210828-insect-loss.html>

Write about **insects** for 10 minutes. Comment on your partner's paper.

HOMework

1. VOCABULARY EXTENSION: Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

2. INTERNET: Search the Internet and find out more about this news story. Share what you discover with your partner(s) in the next lesson.

3. INSECTS: Make a poster about insects. Show your work to your classmates in the next lesson. Did you all have similar things?

4. LIGHT POLLUTION: Write a magazine article about governments greatly reducing the amount of artificial light in our towns and countryside. Include imaginary interviews with people who are for and against this.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

5. WHAT HAPPENED NEXT? Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

6. LETTER: Write a letter to an expert on insects. Ask him/her three questions about them. Give him/her three of your ideas on how to help insects. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

1. c 2. d 3. a 4. e 5. f 6. b 7. g
8. i 9. l 10. n 11. j 12. h 13. k 14. m

TRUE / FALSE (p.5)

- 1 T 2 F 3 F 4 T 5 F 6 F 7 T 8 T

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

- Artificial lighting
- White
- The lead researcher
- Eye-opening
- By 37%
- Twenty-six
- Moth caterpillars
- Two
- Laying eggs
- In unlit areas

WORDS IN THE RIGHT ORDER (p.19)

- Street lights and other forms of artificial lighting.
- The number of insects living near white light.
- LEDs are responsible for disrupting insect behaviour.
- Surprised at the extent of the insect loss.
- A 37 per cent reduction at roadside grassy areas.
- The researchers counted the numbers of moth caterpillars.
- Taken aback by just how stark it was.
- The lights stopped female insects laying eggs.
- Lighting disturbed the feeding behaviour of the insects.
- The caterpillars in the unlit areas were heavier.

MULTIPLE CHOICE - QUIZ (p.10)

1. c 2. a 3. a 4. b 5. d 6. b 7. a 8. c 9. d 10. a

ALL OTHER EXERCISES

Please check for yourself by looking at the Article on page 2.
(It's good for your English ;-)