

Read the “Light Pollution” passage set.

Light Pollution

Source 1: A Light Pollution Study Near You

by Noreen Grice

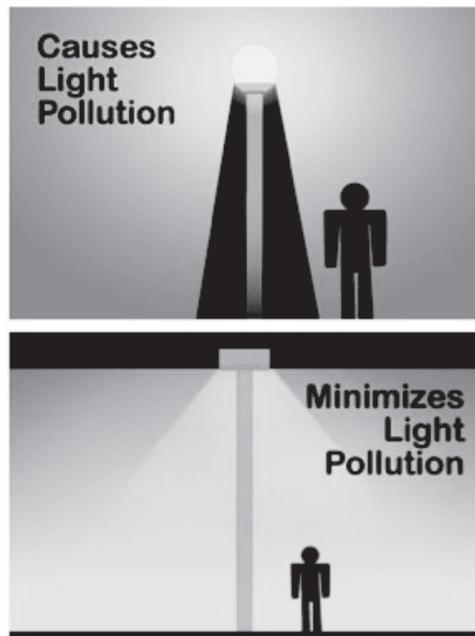
- 1 Thousands of years ago, people looked up at the starry night sky and saw thousands of twinkling stars. They imagined star patterns and star gods; the night sky was a major part of their lives. Ancient sky watchers timed the rising of certain stars or sky patterns and used them as a sky calendar to help decide when to plant and harvest certain crops. . . .
- 2 Today, the nighttime sky has changed, and for some people it has almost disappeared.
- 3 If you live in a big city, ask yourself, “What looks brighter . . . the lights in the buildings or the lights in the sky?” The answer most likely will be that the lights in the buildings are brighter than the stars.
- 4 Businesses that operate at night must have lighting, that’s obvious. But now let’s add in light from street poles and highways, security lights, sports fields, and lit billboards. When you combine all these sources of light, you have so much that it actually illuminates the night sky and makes it hard to see the stars.
- 5 A satellite photograph of North America . . . shows that the most populated areas—particularly Boston; New York; Washington, DC; Chicago; Los Angeles; and generally along the east and west coasts—have the most light output at night. Here, it is almost impossible to do any sky watching at night.
- 6 “Light pollution” is the term that describes the effect of artificial lights on the night sky. But there are concerns even greater than just the increased difficulty of seeing stars. Some studies of light pollution show environmental impacts, with changes in animal behavior and plant growth. For example, birds blinded by lights glowing in high-rise office buildings have become disoriented and flown into the buildings. . . .
- 7 If you live in a light-polluted area, try this simple technique for naked-eye viewing: Cup your hands around your eyes to block out some of the unwanted background light. How much better is your view now?

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Source 2: Sources of Light Pollution

by Renee Bauer

- 8 Light pollution happens when artificial lights make it hard to see the night sky. Most light pollution is caused by outdoor lights, such as street lamps. Many outdoor lights shine upward or sideways. This light escapes upward. It scatters and brightens the night sky. The brightness makes the sky harder to see.
- 9 Air pollution can also cause light pollution. Air pollution happens when harmful particles are released in the air. These particles can harm people, plants, and animals. The particles also make light pollution even worse. They make more light scatter at night.
- 10 Outdoor lights that send all light downward reduce light pollution. These lights are called *full cut-off* lights. They are called full cut-off lights because they give no direct uplight.
- 11 Another way to reduce light pollution is to use less powerful lamps or bulbs.
- 12 Look at the diagram. The top shows an example of poor outdoor lighting. The light shines upward and sideways, which causes light pollution. The bottom shows an example of good outdoor lighting. The light shines downward. This minimizes light pollution.



"Sources of Light Pollution" by Renee Bauer. Written for educational purposes.

Source 3: Light Pollution

by Catherine Clarke Fox

13 In most situations, light helps us see. But when it comes to looking at the night sky, light is actually a kind of pollution.

14 It hampers our view of some of life's most spectacular sights: stars, planets, and even galaxies. "When I was a little boy, I loved the night sky," recalls Robert Gent of the International Dark-Sky Association, an organization working to reduce light pollution.

15 "I remember looking up and the sky was filled with stars, and I asked, 'How many are there? How far away are they? Can we visit them?' I became an astronomer because I was amazed by their beauty," he says. "Now in most big cities kids can't see the stars like I did."

16 Normally, about 2,500 individual stars are visible to the human eye without using any special equipment. But because of light pollution, you actually see just 200 to 300 from today's suburbs, and fewer than a dozen from a typical city.

17 Only one in three Americans can see our own galaxy, the dazzling Milky Way, with the naked eye. Those people live far away from the lights of big cities, office buildings, and shopping malls. . . .

18 Many cities and towns have passed laws limiting lights at night, making sure enough shine for safety without creating a lot of light pollution.

19 Light pollution affects more than our view of the heavens. Research shows that lots of nighttime light can harm wildlife.

20 Migrating birds sometimes fly over cities and become confused by the brightness, flying in circles until they drop from exhaustion. Sea turtles need dark beaches for nesting and won't approach bright lights. Too much light at night may even affect human health; scientists are still learning more.

21 For all these reasons, researchers are working on ways to use lights only when and where they are truly needed. "Everyone deserves to look up at the infinite sky and wonder about the unbounded universe," says Gent.

"Light Pollution" by Catherine Clarke Fox, from <http://kids.nationalgeographic.com/explore/space/light-pollution.html>. Copyright by National Geographic Kids. Reprinted by permission of National Geographic Kids.

Source 4: Cop saves sea turtles hatching at Florida resort

22 Sarasota Officer Derek Conley was on patrol at 1 a.m. Saturday when he saw sea turtle hatchlings crawling toward the front door of the Lido Beach Resort. A passer-by also told Conley that several dozen other baby turtles were crawling around the hotel’s parking lot.

23 Conley, along with some resort guests, scooped up the hatchlings in a box and released them into the water.

24 “I began collecting hatchlings from the street and stopped traffic several times to do so,” wrote Conley in a report. . . .

25 Conley also called two area marine rescue groups.

26 Sea turtles nest from May 1–Oct. 31 in Florida. . . . Sea turtles make anywhere from 40,000–84,000 nests in the state each year. . . .

27 Adult females nest every two or three years and lay several nests in one season. They emerge from the water to nest on the beach mostly at night. Nests average 100 eggs, which incubate in the sand for about 60 days, depending on the species. . . .

28 According to biologists, sea turtle hatchlings are born with the instinct to move toward the brightest direction—on a natural beach, this direction is the light of the open horizon—which could be why the Sarasota turtles were headed toward the hotel’s front door.

“Cop saves sea turtles hatching at Florida resort.” Copyright 2013 by the *Seattle Times*. Reprinted by permission of the *Seattle Times*.

Writing Prompt

Write an informative essay to present to your class about the problem of light pollution in the United States today. Use information from the passages in your essay.

Manage your time carefully so that you can

- read the passages;
- plan your response;
- write your response; and
- revise and edit your response.

Be sure to include

- an introduction;
- information from the passages as support; and
- a conclusion that is related to the information presented.

Your response should be in the form of a multiparagraph essay. Write your response in the space provided.