

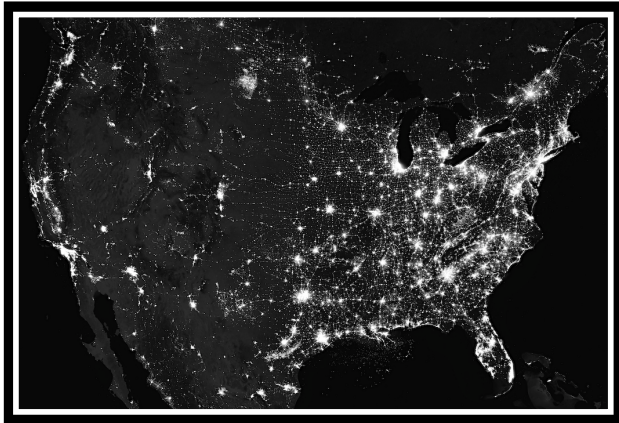


Our Unnatural Night

"The right amount of light, directed at the right place, at the right time."



Where have all the stars gone?



Courtesy of NOAA/NGDC/DMSP

Lighting wastefully directed upwards clearly shows the population centers in the United States

LEDs ... A new challenge

When are LED lights a problem?

When they are...

- unshielded,
- too bright,
- or too blue (i.e., when their correlated color temperature is above 2700 K).

How lighting and light pollution affect our quality of life...

- 1 What percentage of the population in the United States cannot easily see the Milky Way?
 - a. 10%
 - b. about 50%
 - c. greater than 75%
- 2 How many stars are typically seen from a dark country location? How many from a large city?
 - a. 500, 100
 - b. about 1 million, 1000
 - c. perhaps 2000, less than 100
- 3 About how many birds are killed annually in the United States due to the effects of bad outdoor lighting?
 - a. over 100 million
 - b. about 1 million
 - c. 10,000
- 4 Light pollution contributes to the decline of the firefly population. Why?
 - a. Insect predators see them more easily.
 - b. Fireflies can't find mates.
 - c. Fireflies can't find food.
- 5 About how much does a typical dusk to dawn fixture cost the power company and how much does it charge to keep it lit every night for 1 year?
 - a. \$30, \$70
 - b. \$1000, \$30
 - c. \$10, \$10
- 6 In general, what part of the 24-hour day is most crime committed?
 - a. in daylight hours
 - b. during the night
 - c. all the time
- 7 How much money is wasted each year in the US by misdirected light?
 - a. \$300 million
 - b. \$3 billion
 - c. \$30 billion
- 8 Medical researchers have established a link between the likelihood of contracting breast cancer and the exposure to artificial lighting during normal sleep hours.

True or False?

 - a. astronomers
 - b. people who work at night
 - c. everyone
- 9 Who does light pollution affect the most?

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- 10 Is there a bothersome light near where you live?