1
00:00:08,090 --> 00:00:12,110
Urban heat islands affect human

2
00:00:12,130 --> 00:00:16,140
health and it affects energy consumption. Those two things alone are

3
00:00:16,160 --> 00:00:20,190
enough to drive worldwide interest. (Zhang) When we

4
00:00:20,210 --> 00:00:24,210
build an urban area, we're replacing the vegetated surface and also

5
00:00:24,230 --> 00:00:28,220
the soil surface with this imperious surface like the

6
00:00:28,240 --> 00:00:32,230
paving material and the building material. By doing this, we're basically

7
00:00:32,250 --> 00:00:36,280
warming the urban areas, and this will generate a temperature difference.

8
00:00:36,300 --> 00:00:40,330
And that's what we can the urban heat island. We find out

9
00:00:40,350 --> 00:00:44,370
that the urban heat island affected by several factors.

10
00:00:44,390 --> 00:00:48,410
The first factor will be the surrounding ecological context.

11
00:00:48,430 --> 00:00:52,450
And then will be the size of the city. When talking about size, we can

12
00:00:52,470 --> 00:00:56,480
we mean both the area of the city and also the population size

13
00:00:56,500 --> 00:01:00,500

of the city. And then will be the shape of the city

14
00:01:00,520 --> 00:01:04,520
and also the development patterns of the city.

15
00:01:04,540 --> 00:01:08,540
(Imhoff) We used a variety of satellite data, both land surface data

16
00:01:08,560 --> 00:01:12,590
from MODIS and also impervious surface data from the

17
00:01:12,610 --> 00:01:16,650
Landsat satellite. Inpervious surface data essentially tells us

18
00:01:16,670 --> 00:01:20,680
how much building material is on the land surface in order to study the urban

19
00:01:20,700 --> 00:01:24,710
heat island. The urban heat island is much larger if you

20
00:01:24,730 --> 00:01:28,740
convert a forested area into an urban. And this is because the urban

21
00:01:28,760 --> 00:01:32,800
heat island is a relative measure. So, urban areas in forests

22
00:01:32,820 --> 00:01:36,810
are much warmer than the surrounding landscape than they are in deserts

23
00:01:36,830 --> 00:01:40,840
for example, because the surrounding landscape is already warm.

24
00:01:40,860 --> 00:01:44,880
I think the general public should be interested in urban heat islands because of the

25
00:01:44,900 --> 00:01:48,940
fact that it's where most of the people live and in the next

26
00:01:48,960 --> 00:01:52,990
50 years, we're going to see 80% of the global population living in

27
00:01:53,010 --> 00:01:57,040
cities. And the urban heat island matters for

28
00:01:57,060 --> 00:02:01,080
everything from health, like asthma and heart conditions,

29
00:02:01,100 --> 00:02:05,120
to how much heating and air conditioning you need to use to