



1  
00:00:00,010 --> 00:00:03,580

In the summer of 1988,

2  
00:00:03,600 --> 00:00:06,830

a complex of fires broke out in Yellowstone National Park.

3  
00:00:06,850 --> 00:00:13,280

The fires actually consumed a huge amount of acreage and profoundly affected the ecology of the Park.

4  
00:00:13,300 --> 00:00:17,020

And still to this day, as you can see in the images

5  
00:00:17,040 --> 00:00:19,980

the imprint of the fire remains.

6  
00:00:20,000 --> 00:00:25,280

The recovery is certainly going to take decades, if not centuries to actually occur.

7  
00:00:28,070 --> 00:00:32,070

In these images, the healthy vegetation is dark green.

8  
00:00:32,090 --> 00:00:36,170

That's the sign of tall, healthy forest.

9  
00:00:36,190 --> 00:00:40,250

And what you can see, right after the fire,

10  
00:00:40,270 --> 00:00:44,330

is the very obvious fire scar. That's the dark reddish-brown color.

11  
00:00:44,350 --> 00:00:48,400

Landsat actually images the earth using a variety of spectral bands, in different wavelengths.

12  
00:00:48,420 --> 00:00:52,430

Some of these wavelengths are not visible to the human eye,

13  
00:00:52,450 --> 00:00:56,470

but are useful for assessing the composition of the land surface.

14

00:00:56,490 --> 00:01:00,510

The red wavelength, for example, is sensitive to leaf area

15

00:01:00,530 --> 00:01:04,540

because the chlorophyll in leaves tends to reflect a lot of light in the near-infrared.

16

00:01:04,560 --> 00:01:10,380

The reflectance of the fire scars tends to be dominated by the char that's left on the ground.

17

00:01:10,400 --> 00:01:16,740

The char, initially, tends to be fairly bright in the short-infrared.

18

00:01:16,760 --> 00:01:22,730

So in this case, for example, we've assigned the short-wave infrared band to the red,

19

00:01:22,750 --> 00:01:24,820

we've assigned the near-infrared band to the green,

20

00:01:24,840 --> 00:01:28,080

and we've assigned the green band to the blue.

21

00:01:28,100 --> 00:01:30,480

And that creates what we call a "false-color" image.

22

00:01:30,500 --> 00:01:32,950

It's not exactly what your eye would see,

23

00:01:32,970 --> 00:01:37,280

but it's quite convenient because the healthy vegetation shows up as green

24

00:01:37,300 --> 00:01:39,980

and so we can, sort of, automatically interpret that.

25

00:01:40,000 --> 00:01:42,980

One thing that's interesting about the Yellowstone site

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00:01:43,000 --> 00:01:46,980

is that it's a very hostile site for forests.

27

00:01:47,000 --> 00:01:51,680

It's high up, it has a short growing season, it's quite dry,

28

00:01:51,700 --> 00:01:57,020

and this is probably one reason why the recovery in that area has been so slow.