1
00:00:04,710 --> 00:00:02,629
soaring high above our home planet

2
00:00:06,309 --> 00:00:04,720
landsat 9 will provide critical data on

3
00:00:09,030 --> 00:00:06,319
how earth is changing

4
00:00:11,270 --> 00:00:09,040
circling the globe every 99 minutes 14

5
00:00:12,340 --> 00:00:11,280
orbits a day continuing decades of

6
00:00:14,549 --> 00:00:12,350
observations

7
00:00:16,550 --> 00:00:14,559
[Music]

8
00:00:17,910 --> 00:00:16,560
the impact of the landsat record is the

9
00:00:19,990 --> 00:00:17,920
sheer amount of information we've

10
00:00:22,230 --> 00:00:20,000
collected all across the world since

11
00:00:24,230 --> 00:00:22,240
1972

12
00:00:26,550 --> 00:00:24,240
and it is high quality science caliber

13
00:00:28,460 --> 00:00:26,560

data enabling us to accurately track

14
00:00:30,150 --> 00:00:28,470
changes over time

15
00:00:32,310 --> 00:00:30,160
[Music]

16
00:00:34,870 --> 00:00:32,320
50 years of las vegas expanding may be

17
00:00:37,030 --> 00:00:34,880
fairly simple to notice but we can also

18
00:00:38,790 --> 00:00:37,040
observe short-term changes

19
00:00:43,270 --> 00:00:38,800
like the growth of farm crops through a

20
00:00:47,750 --> 00:00:45,190
with more than one landsat satellite in

21
00:00:49,750 --> 00:00:47,760
orbit plus the european sentinel-2

22
00:00:51,990 --> 00:00:49,760
satellites we will get data several

23
00:00:54,080 --> 00:00:52,000
times each week improving our ability to

24
00:00:56,709 --> 00:00:54,090
track crop health and more

25
00:00:57,910 --> 00:00:56,719
[Music]

26
00:00:59,910 --> 00:00:57,920
the temperature measurements from

27
00:01:02,950 --> 00:00:59,920
landsat 9 will be used to calculate how

28
00:01:04,630 --> 00:01:02,960
much water was used by each farm field

29
00:01:06,310 --> 00:01:04,640
the central plat natural resources

30
00:01:08,870 --> 00:01:06,320
district like many throughout the

31
00:01:10,950 --> 00:01:08,880
western united states relies on landsat

32
00:01:14,870 --> 00:01:10,960
data to manage irrigation and increase

33
00:01:18,710 --> 00:01:17,109
landsat 9 will also improve monitoring

34
00:01:20,550 --> 00:01:18,720
of coastal waters

35
00:01:22,630 --> 00:01:20,560
the increased precision and data sent

36
00:01:24,149 --> 00:01:22,640
back from landsat 9 will allow finer

37
00:01:26,469 --> 00:01:24,159
distinctions in the levels of light

38
00:01:29,050 --> 00:01:26,479

reflected from water making it easier to

39
00:01:31,190 --> 00:01:29,060
identify any pollutants that are present

40
00:01:33,350 --> 00:01:31,200
[Music]

41
00:01:35,270 --> 00:01:33,360
around the globe growing population and

42
00:01:37,830 --> 00:01:35,280
expanding development result in higher

43
00:01:39,749 --> 00:01:37,840
amounts of runoff damaging sensitive

44
00:01:41,749 --> 00:01:39,759
near-shore ecosystems

45
00:01:43,990 --> 00:01:41,759
landsat's long history lets us look into

46
00:01:45,010 --> 00:01:44,000
the past to see the effects of land use

47
00:01:48,149 --> 00:01:45,020
changes

48
00:01:49,990 --> 00:01:48,159
[Music]

49
00:01:52,069 --> 00:01:50,000
the consequences of climate change can

50
00:01:53,350 --> 00:01:52,079
also be seen in landsat's long data

51
00:01:55,270 --> 00:01:53,360
record

52
00:01:57,510 --> 00:01:55,280
scientists have used landsat to track

53
00:02:01,429 --> 00:01:57,520
shrinking glaciers for decades and

54
00:02:05,270 --> 00:02:03,350
the glaciers in the himalayas are a key

55
00:02:06,789 --> 00:02:05,280
water source for billions of people in

56
00:02:08,790 --> 00:02:06,799
south asia

57
00:02:10,630 --> 00:02:08,800
due to global warming the increased

58
00:02:12,869 --> 00:02:10,640
meltwater collects in large lakes at

59
00:02:14,630 --> 00:02:12,879
high altitudes and poses a flooding risk

60
00:02:16,790 --> 00:02:14,640
to downstream villages

61
00:02:19,830 --> 00:02:16,800
landsat data is essential to monitor the

62
00:02:21,830 --> 00:02:19,840
growth of these lakes

63
00:02:23,910 --> 00:02:21,840

because of their location glaciers are

64
00:02:25,990 --> 00:02:23,920
not easy to study in person but

65
00:02:28,309 --> 00:02:26,000
landsat's view from space allows us to

66
00:02:30,150 --> 00:02:28,319
study glaciers all around the globe

67
00:02:31,830 --> 00:02:30,160
landsat 9's improvements will make it

68
00:02:32,869 --> 00:02:31,840
easier to see features on the glacier

69
00:02:34,949 --> 00:02:32,879
surface

70
00:02:36,869 --> 00:02:34,959
with that we can better track how fast

71
00:02:39,270 --> 00:02:36,879
the glacier is moving

72
00:02:41,509 --> 00:02:39,280
knowing the velocity of the ice now and

73
00:02:43,750 --> 00:02:41,519
how it has changed over the past decades

74
00:02:45,509 --> 00:02:43,760
helps us forecast likely contributions

75
00:02:50,630 --> 00:02:45,519
to rising sea levels in a changing

76
00:02:55,910 --> 00:02:53,110
landsat 9 joins landsat 8 to continue

77
00:02:57,589 --> 00:02:55,920
the unbroken string of landsat data

78
00:02:59,910 --> 00:02:57,599
for five decades we have relied on

79
00:03:01,990 --> 00:02:59,920
landsat's high caliber science quality

80
00:03:04,470 --> 00:03:02,000
observations to understand and protect

81
00:03:06,630 --> 00:03:04,480
our home planet

82
00:03:07,589 --> 00:03:06,640
and while landsat 9 begins sending back

83
00:03:09,430 --> 00:03:07,599
data