Dr. Catherine Mitchell

Bigelow Laboratory Scientist and Project Co-lead

1
00:00:03,669 --> 00:00:01,829
[Music]

2
00:00:05,910 --> 00:00:03,679
there's a body of water in the north

3
00:00:08,950 --> 00:00:05,920
atlantic ocean that's among the fastest

4
00:00:11,270 --> 00:00:08,960
warming regions on the entire planet

5
00:00:13,669 --> 00:00:11,280
a recent nasa-funded study links this

6
00:00:15,589 --> 00:00:13,679
sharply accelerating warming event with

7
00:00:20,070 --> 00:00:15,599
concerning impacts on new england's

8
00:00:25,189 --> 00:00:22,390
researchers at bigelow laboratory for

9
00:00:27,429 --> 00:00:25,199
ocean sciences collect data out at sea

10
00:00:28,550 --> 00:00:27,439
using a surprisingly cost effective

11
00:00:30,870 --> 00:00:28,560
method

12
00:00:33,590 --> 00:00:30,880
the ferry between portland maine and

13
00:00:35,670 --> 00:00:33,600

yarmouth nova scotia

14
00:00:38,549 --> 00:00:35,680
they're collecting data on temperature

15
00:00:40,869 --> 00:00:38,559
salinity optical chemical and biological

16
00:00:44,470 --> 00:00:40,879
observations that can give insight into

17
00:00:46,310 --> 00:00:44,480
how fast the gulf is changing

18
00:00:48,630 --> 00:00:46,320
the team has been taking the pulse of

19
00:00:50,630 --> 00:00:48,640
the gulf for 23 years

20
00:00:54,389 --> 00:00:50,640
a long-term data set that's called the

21
00:00:55,590 --> 00:00:54,399
gulf of maine north atlantic time series

22
00:00:56,869 --> 00:00:55,600
you need

23
00:00:59,670 --> 00:00:56,879
that

24
00:01:03,029 --> 00:00:59,680
longer time period to really get a sense

25
00:01:05,189 --> 00:01:03,039
of any change that might be happening

26
00:01:08,230 --> 00:01:05,199
the team also uses autonomous gliders

27
00:01:10,550 --> 00:01:08,240
that cross the same sampling line

28
00:01:12,070 --> 00:01:10,560
like the ferry and research cruise data

29
00:01:14,149 --> 00:01:12,080
the gliders collect temperature

30
00:01:17,990 --> 00:01:14,159
measurements at the surface and right

31
00:01:22,710 --> 00:01:20,870
so what does a warmer saltier gulf of

32
00:01:24,710 --> 00:01:22,720
maine mean

33
00:01:26,870 --> 00:01:24,720
there's a lot of implications here but

34
00:01:29,109 --> 00:01:26,880
one of the biggest is the effect it has

35
00:01:31,429 --> 00:01:29,119
on phytoplankton

36
00:01:34,230 --> 00:01:31,439
results show that phytoplankton are at

37
00:01:35,990 --> 00:01:34,240
least 65 percent less productive than

38
00:01:37,030 --> 00:01:36,000

they were before this major warming

39
00:01:39,030 --> 00:01:37,040
event

40
00:01:41,830 --> 00:01:39,040
this could have serious implications for

41
00:01:43,429 --> 00:01:41,840
local fisheries including lobster you

42
00:01:44,950 --> 00:01:43,439
know the gulf of maine is this big

43
00:01:47,590 --> 00:01:44,960
resource for

44
00:01:50,230 --> 00:01:47,600
the economy of maine so understanding

45
00:01:52,310 --> 00:01:50,240
what those changes are is what's

46
00:01:53,990 --> 00:01:52,320
really important

47
00:01:56,630 --> 00:01:54,000
anticipating disruptions to

48
00:01:59,030 --> 00:01:56,640
phytoplankton productivity is critical