
2011
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug

1
00:00:04,060 --> 00:00:08,080
Gail: Actually the snow right now is not abnormal right now. What we're seeing

2
00:00:08,100 --> 00:00:12,110
over the past couple of years is that snow can vary from month to month

3
00:00:12,130 --> 00:00:16,130
and over the past few winters, yeah, we've seen a lot of snow, but this year, there's not much

4
00:00:16,150 --> 00:00:20,150
snow, but it's not by far the least amount of snow that we've had.

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00:00:20,170 --> 00:00:24,160
2006 had less snow, and as we would recall in 2010 we had

6
00:00:24,180 --> 00:00:28,180
quite a bit of snow. So it's really not abnormal; it's just the global cycle working

7
00:00:28,200 --> 00:00:32,200
together.

8
00:00:32,220 --> 00:00:36,240
There's lots of impacts for not having enough snow. Snow is quite an

9
00:00:36,260 --> 00:00:40,290
important part of the water cycle. When snow falls it lands on snowpacks, and it's

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00:00:40,310 --> 00:00:44,340
stays there. It's like a battery and it holds the energy of that snow

11
00:00:44,360 --> 00:00:48,370
it holds that water. So that when it melts out in the spring and the summer, we can use that

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00:00:48,390 --> 00:00:52,410
for water resources. If we get less snow, that means that it melts earlier

13
00:00:52,430 --> 00:00:56,430

and also there's an issue with if it melts,

14
00:00:56,450 --> 00:01:00,450
it means that the Earth, which is typically reflective when there's snow cover; it's like a

15
00:01:00,470 --> 00:01:04,460
mirror, it allows it to absorb more heat. So we really want to have as much snow as

16
00:01:04,480 --> 00:01:08,470
we can for our normal cycles.

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00:01:08,490 --> 00:01:12,530
Yeah, there were a couple factors

18
00:01:12,550 --> 00:01:16,570
that NASA researchers have recently uncovered. One of th

19
00:01:16,590 --> 00:01:20,620
big things for the Snowmageddon in 2010 is that we were in an El Nino

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00:01:20,640 --> 00:01:24,650
year, and what that means is that there's a lot of moisture from the

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00:01:24,670 --> 00:01:28,690
Pacific Ocean was uplifted and brought over the U.S. And what happened

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00:01:28,710 --> 00:01:32,710
there, then it's deposited in the southeast U.S.

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00:01:32,730 --> 00:01:36,720
came up the east coast. And then what we had was another factor, which was

24
00:01:36,740 --> 00:01:40,730
called the North Atlantic Oscillation, and in 2010 it was persistently

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00:01:40,750 --> 00:01:44,740
negative. And really what that means is that there was a high pressure system over the polar

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00:01:44,760 --> 00:01:48,790
regions that was pushing cold air down. So the interacting moisture for

27
00:01:48,810 --> 00:01:52,830
the Pacific Ocean with the cold air from the Arctic, what happens then is

28
00:01:52,850 --> 00:01:56,880
we get snow, and we got a lot of snow in 2010.

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00:01:56,900 --> 00:02:00,910
There's many reasons to study

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00:02:00,930 --> 00:02:04,940
snow from space. Sure, you can go in your backyard or use your radar

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00:02:04,960 --> 00:02:08,960
to measure it from space. But over the oceans there's

32
00:02:08,980 --> 00:02:12,980
no way to measure the snow. When you measure snow from space you can get uniform

33
00:02:13,000 --> 00:02:16,990
measurements that can be applied globally and also can be used

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00:02:17,010 --> 00:02:21,000
in models for better forecasting for weather and for better forecasting

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00:02:21,020 --> 00:02:25,050
of the climate change and how we are going to predict climate change.

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00:02:29,110 --> 00:02:33,120
NASA is doing some great things right now to understand winter storm mechanics.

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00:02:33,140 --> 00:02:37,150
We have a field campaign going on right now which is in the January

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00:02:37,170 --> 00:02:41,180

time period of 2012. We've got an aircraft called the DC-8, which many of you

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00:02:41,200 --> 00:02:45,210
might have flown on, and I was actually on last week. And this aircraft is flying

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00:02:45,230 --> 00:02:49,220
over the tops of the snow clouds over southern Ontario. And with it we're also

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00:02:49,240 --> 00:02:53,240
measuring some other information with other spiralling aircraft, and we've

42
00:02:53,260 --> 00:02:57,240
put all this information together to get a three-dimensional structure of the snow.

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00:02:57,260 --> 00:03:01,290
We're going to use that for Global Precipitation Measurement, which is a satellite

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00:03:01,310 --> 00:03:05,330
that's going to be launched in 2014. And this satellite is going to provide us everything

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00:03:05,350 --> 00:03:09,370
from the heavy tropical rain you might see in hurricanes all the way through the snow.

46
00:03:09,390 --> 00:03:13,400
And the information we're getting right now is going to help improve those models