TRANSCRIPT

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00:00:03.179 --> 00:00:12.059

Super okay. Great. Well, uh, again, thank you. Everybody for joining us for this training on the ears.

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00:00:12.059 --> 00:00:18.659

Uh, drought products, best practices for using these products specifically for.

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00:00:18.659 --> 00:00:26.400

The authors, the AirDrop products for the is, of course, packaged in a different way than.

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00:00:26.400 --> 00:00:32.430

The types of products we give out to the public, so this is a boutique training.

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00:00:32.430 --> 00:00:36.450

Or the U. S. D. M. go to the next slide.

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00:00:41.310 --> 00:00:49.645

So, I wanted to introduce our drought team. Ali, raise a fair amount will be leading the training. Today. He is our drought lead.

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00:00:49.825 --> 00:00:51.745

We'll hear a little bit more about him in a 2nd.

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00:00:52.080 --> 00:00:58.440

I'm Sharon. Vazquez, Ray, I'm the applications lead for the atmospheric infrared. Sounder.

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00:00:58.945 --> 00:01:03.835

Stephanie Granger is a group supervisor here at, and for the applied science system,

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00:01:03.835 --> 00:01:10.825

engineering group and Stephanie Granger is actually a founding member of the effort to get the.

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00:01:11.160 --> 00:01:20.070

Airs drought products used by the U. S drown monitors. So it's through her efforts and that. We are here today.

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00:01:20.070 --> 00:01:28.620

Stephen jacada is our renowned, uh, science applications developer where the rubber hits the road in terms of code.

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00:01:28.620 --> 00:01:35.280

And hate our threats person. He is also a key member of various applications. He's our user services lead.

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00:01:35.280 --> 00:01:39.930

And he plays a key role in the team as well. So we've all been.

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00:01:39.930 --> 00:01:48.270

Working hard over the past more than many months, I think, to bring this material to you today.

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00:01:48.565 --> 00:01:56.665

Excellent. And I think everybody is probably more than familiar with, uh, Webex environment.

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00:01:56.755 --> 00:02:00.415

But again, if you would be so kind is to make sure you're muted.

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00:02:01.195 --> 00:02:10.585

Except if you have a question, and if you have a question while Ali Rosa is giving the presentation, go ahead and enter it in the chat,

19

00:02:10.615 --> 00:02:15.055

there will be a Q and a period following the presentation.

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00:02:16.765 --> 00:02:24.565

And also, please put note in the chat or whatever or email if needed if it's that bad too.

21

00:02:24.595 --> 00:02:32.815

If you're having any technical problems and the key items, there are the mute and unmute button. You can see circled there and pink on the left.

22

00:02:33.090 --> 00:02:40.740

And that a balloon icon is the chat icon for you can click on that and enter your comments in there.

23

00:02:40.740 --> 00:02:49.890

And then also for the Q and a, if you have a question, you can mouse over the area to the right of your name and you will see a hand icon up here.

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00:02:49.890 --> 00:02:53.220

And you can click on that that's raising your hand.

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00:02:53.220 --> 00:02:58.350

Any questions okay next slide.

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00:03:00.090 --> 00:03:07.800

And this is our agenda, I'll just give a high level touchdown on that. We'll be starting out with the.

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00:03:07.800 --> 00:03:16.200

Really the context about the drought products about ears, and in our partnership with the U. S drought monitor.

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00:03:16.200 --> 00:03:23.790

Then we won't move into best practices Ali, raise the when we're talking about specifically about use cases. This is sort of the meat and potatoes of the.

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00:03:23.790 --> 00:03:32.970

Presentation and then looking forward after that what's what's next in terms of data continuity and so forth after that uh.

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00:03:32.970 --> 00:03:38.790

Uh, we can have a short break unless folks just want to proceed to the Q and a.

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00:03:38.790 --> 00:03:44.280

And then after that, we will have a very short survey that we'd appreciate your feedback.

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00:03:44.280 --> 00:03:47.610

We have a few questions and would love your insight on that.

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00:03:47.610 --> 00:03:54.210

All right, um, with that, we're going to start into the presentation.

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00:03:54.210 --> 00:04:01.320

And Ali raise is going to take over, but I wanted to just give you a little bit of background. So, you know, who is who is talking.

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00:04:01.320 --> 00:04:07.020

Um, Ali raise a Fairmont has a PhD in water resources engineering from UC Irvine.

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00:04:07.345 --> 00:04:14.335

He's currently a scientist affiliated with through Raytheon and he's also a lecture at calstate L. A. Los Angeles here.

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00:04:15.174 --> 00:04:23.155

Um, his research interests include the utilization of remote sensing observations with statistical approaches and techniques.

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00:04:23.430 --> 00:04:28.439

For developing more reliable models of Hydro logic systems with focus areas.

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00:04:28.439 --> 00:04:36.509

That include Hydro climate extremes and their impacts on water resource, management, food, security, and vegetation health.

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00:04:36.509 --> 00:04:44.219

Ali raised actively collaborating with stakeholders to insure his research can be integrated into operational applications.

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00:04:44.219 --> 00:04:51.029

Ali raise it isn't awardee of the National Science Foundation technology, transfer, entrepreneurial, lead scholarship.

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00:04:51.029 --> 00:04:58.764

And he's been working with the and the U. S. Forest Service to integrate throughout in Wildfire, monitoring models into operations.

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00:04:58.764 --> 00:05:02.244

And finally he loves to hold workshops and seminars.

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00:05:02.339 --> 00:05:07.619

To engage end users with NASA applied sciences in the development.

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00:05:07.619 --> 00:05:12.359

Of tools and services, so, with that, thank you all the reason.

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00:05:13.104 --> 00:05:18.804

Thank you so much Sharon and, um, I just want to mention it's great to be here.

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00:05:18.834 --> 00:05:24.534

Uh, finally, as Brian said, we are holding this workshop, which we have all been so excited.

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00:05:24.839 --> 00:05:30.479

About since last year, um, okay.

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00:05:32.039 --> 00:05:39.479

So, I will start talking about the value of satellite data to help detect the drought.

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00:05:39.479 --> 00:05:48.804

So, we know that historically, ground based observations, such as, uh, stations they have historically been used for droughts monitoring,

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00:05:48.804 --> 00:05:55.674

and they provide valuable climate and other logic information, such as precipitation, solid moisture and so on.

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00:05:55.704 --> 00:05:59.124

But they have several limitations among them.

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00:05:59.124 --> 00:06:07.254

We see that there are there is an even distribution of ground based observations, such as the rain gauges. Um.

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00:06:07.529 --> 00:06:11.399

There was temporal and spatial inconsistencies.

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00:06:11.844 --> 00:06:19.104

For these observations, and lastly, there are like, there's a lack of observations in remote regions, such as in mountainous regions.

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00:06:19.104 --> 00:06:21.924

So, therefore, satellite based products,

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00:06:22.014 --> 00:06:31.764

they are another valuable information that could be used to help to take trout in general for the field of trout monitoring and

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00:06:31.764 --> 00:06:38.004

forecasting. So, in the bottom, right you see a schematic image of the satellite.

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00:06:38.034 --> 00:06:43.074

So, for which the earth instrument is on the board of this for satellite.

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00:06:43.349 --> 00:06:49.349

I'll talk more about the instrument in particular in the following slides.

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00:06:50.909 --> 00:06:56.364

Um, so specifically we know the draft monitoring field is very diverse,

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00:06:56.814 --> 00:07:04.614

but the value of hers observations and errors based trout indices, it's particularly in drought,

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00:07:04.644 --> 00:07:12.684

onset and early detection. So we know that early drug detection is very important and critical in several sectors.

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00:07:12.899 --> 00:07:16.529

Including water and, uh, uh, agriculture.

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00:07:17.064 --> 00:07:19.614

For example, while their managers, uh,

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00:07:19.644 --> 00:07:28.314

they can use this information for all the resource planning farmers could purchase less fertilizers and increase their insurance coverage before the growing season.

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00:07:28.314 --> 00:07:30.774

If they're aware of the upcoming drought.

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00:07:31.644 --> 00:07:32.994

So, historically,

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00:07:33.354 --> 00:07:43.284

the most commonly used index for asset detection is transportation and hence standardized precipitation index or but.

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00:07:43.739 --> 00:07:52.589

Uh, the research shows that new surface area of humidity, temperature and pressure deficit, or.

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00:07:52.589 --> 00:07:57.539

Have the potential to detect drought earlier than.

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00:07:57.539 --> 00:08:04.649

So, in the following site, I will talk about, uh, 2 of the publications that has proved this.

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00:08:04.649 --> 00:08:10.734

So this is the part of the paper I worked on when I was a grad student, uh,

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00:08:10.764 --> 00:08:19.764

UC Irvine with my former supervisor and Joel to share with the areas manager. And for this paper we showed that.

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00:08:20.604 --> 00:08:30.354

The mean, probability of relative humidity, early drought detection, compared to precipitation is around 60% globally. And this is a special map.

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00:08:30.354 --> 00:08:30.774

map

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00:08:31.049 --> 00:08:39.534

Of the, uh, probably 2 throughout detection of relative humidity, compared to presentation and in the bottom plot,

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00:08:39.624 --> 00:08:47.274

we investigated the main lead time of relative humidity compared to presentation and it was estimated as around.

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00:08:47.549 --> 00:08:51.659

2 months globally, and that was a very promising.

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00:08:51.659 --> 00:08:55.619

Results we got out of this work.

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00:08:58.704 --> 00:09:07.014

In another study, uh, uh, so the who was scientists and now, uh,

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00:09:07.044 --> 00:09:15.744

he's at University of Arizona with professor and Stephanie Granger at they looked at.

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00:09:17.609 --> 00:09:26.064

Um, the value of air temperature and different pressure deficit, or for a trial to answer detection,

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00:09:26.064 --> 00:09:33.834

and they also showed that there's a great potential for drug onset detection for these 2 variables similar to relative humidity.

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00:09:34.374 --> 00:09:43.884

And just note here is that the is defined as a difference between the amount of moisture in the air and how much moisture the air can

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00:09:43.914 --> 00:09:52.344

hold. It is saturated. And the very appealing aspects of is that is incorporates both elements of her temperature.

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00:09:52.674 --> 00:10:01.524

And, um, humidity now,

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00:10:01.854 --> 00:10:09.564

a little bit background about our instrument errors. So, as it stands for atmospheric inference, sounder, which is on board of.

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00:10:11.544 --> 00:10:21.534

Satellite as I mentioned earlier, so it was designed with the go to support climate research and improve. Whether forecasting is satellite.

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00:10:22.254 --> 00:10:24.924

The satellite was launched in 2002. thousand and two

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00:10:25.259 --> 00:10:31.739

And the earth, uh, mission is expected to seize operations around 2025.

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00:10:33.174 --> 00:10:38.244

So, errors, measures, incorrect, radiances or brightness temperatures admitted from Earth.

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00:10:38.664 --> 00:10:45.414

There is around 2400 detectors, which create profiles of temperature and water wafer. and water wafer

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00:10:45.989 --> 00:10:55.739

Um, uh, it's the earth follows a polar Orbitz, uh, which a minimum of 2 over passes per day and there are more overpasses and Colts.

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00:10:55.739 --> 00:11:02.634

Um, there's, uh, sees the entire which has a global coverage, and it has a 16 day repeat cycle,

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00:11:02.664 --> 00:11:08.724

meaning that it passes over the same long and major logic conditions. Every 16 days.

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00:11:08.969 --> 00:11:13.769

Our, uh, level 2 data, which is our granular base data.

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00:11:13.769 --> 00:11:17.699

Uh, has a 45 kilometer resolution.

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00:11:18.594 --> 00:11:24.384

So, in overall errors, soundings or equivalent to launching more than 300,000 radio,

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00:11:24.384 --> 00:11:33.114

sounds on the 45 kilometer grid over the globe each day. And the instrument is healthy and we are so happy. are so happy

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00:11:33.389 --> 00:11:38.609

Uh, that the instrument has been orbiting the earth since 2002.

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00:11:43.254 --> 00:11:52.284

So, an important note I want to mention here, is that data or direct observations, meaning that all the data going.

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00:11:52.704 --> 00:11:56.124

Into the calculation of the geo physical quantities, uh,

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00:11:56.154 --> 00:12:06.024

including the drought indices later on or not model drive and we believe this is a strong advantage of our aerospace products compared to

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00:12:06.054 --> 00:12:08.124

other indices available.

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00:12:10.049 --> 00:12:16.049

So, yes, you dropped out for a few minutes so whatever you said in the last minute.

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00:12:16.049 --> 00:12:20.159

Oh, it's not, uh.

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00:12:20.159 --> 00:12:23.429

Did you hear about the errors? Should I.

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00:12:23.429 --> 00:12:28.289

I didn't have him drop off on my end. I heard everything.

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00:12:28.289 --> 00:12:32.519

Okay. Oh, okay. Thank you. Okay.

111

00:12:32.519 --> 00:12:38.069

Thanks Brian. All right so now, um.

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00:12:38.069 --> 00:12:43.589

So, going forward now that we have talked about the direct up our direct observations.

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00:12:43.589 --> 00:12:51.809

I want to give a little background about the collaboration between the earth people and folks and the U. S. routes monitor.

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00:12:51.809 --> 00:13:01.799

In 2016, Stephanie Granger and alipa Randy, who was the? And now at the University of Arizona, they visited National Drug medication center.

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00:13:01.799 --> 00:13:11.189

And they showcase these 3 aerospace throughout products of earth with pressure deficit, relative, humidity and temperature.

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00:13:11.454 --> 00:13:21.174

And an agreement was secured at the time, so that the evaluates our age and temperature drought products.

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00:13:21.389 --> 00:13:28.499

And Here's photo that was taken in 2016 from, and.

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00:13:31.589 --> 00:13:39.359

Um, it's a little overall, uh, summary about what we delivered to. I think most of you are familiar with, but.

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00:13:39.359 --> 00:13:44.219

Uh, we deliver anomalies of 3 near surface quantities.

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00:13:44.219 --> 00:13:50.819

Provided as prison towns, and these are temperature, relative humidity and with a pressure deficits.

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00:13:51.174 --> 00:14:00.564

And we deliver these products into 4 different moving windows of 7 day, 14 day, 28 day or almost 1 month and 56 day,

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00:14:00.564 --> 00:14:02.634

which is 2 month averages. month averages

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00:14:03.119 --> 00:14:08.759

All the delivered weekly on Mondays to the FTP server.

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00:14:09.354 --> 00:14:19.314

And the data source that are used delivered to generate these maps or level 2 standard, and near real time swap data,

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00:14:19.704 --> 00:14:28.284

I'll go over the details later on the methodology section. But in general, these 2 products are used to generate the maps.

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00:14:28.409 --> 00:14:35.459

Um, data are then use this raw data will be used to make a custom half a degree greeted daily products.

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00:14:35.754 --> 00:14:43.434

Um, and we only use the science data tagged with the quality flags of 0, which is best or 1, which is good.

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00:14:43.434 --> 00:14:47.364

So we do not use any data of suspect quality of 2.

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00:14:47.669 --> 00:14:51.179

And all our maps covered the entire coolness.

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00:14:52.194 --> 00:15:01.764

Note about the climate topology is that as, you know, we need a climate technology for generating the trout indices and our climate we generate.

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00:15:02.334 --> 00:15:10.884

A monthly mean climate topology every week and as the earth's mission continues to work with the earth,

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00:15:11.484 --> 00:15:18.054

we get more data and hence the climate is updated weekly. So it's a dynamic climate topology.

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00:15:18.329 --> 00:15:27.059

Our 7 day earth products throughout products, being available as since April 2017.

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00:15:27.059 --> 00:15:31.829

Our 14 day products have been available since August.

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00:15:31.829 --> 00:15:38.489

And are 2008 and 50, 60 products can be available since August 2017.

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00:15:44.844 --> 00:15:52.974

Okay, this is the example of a 4 of our job products, um, which was delivered to the U. S. DM.

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00:15:53.549 --> 00:15:56.999

And these are for errors products.

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00:15:56.999 --> 00:16:01.679

From the week ending, January 31st, 2022.

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00:16:01.679 --> 00:16:06.599

And the top left, you see the 7 day average.

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00:16:06.599 --> 00:16:12.479

On the top, right? You see the 5,014 day average product and the bottom left.

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00:16:12.479 --> 00:16:18.359

You see the 2008 day average, and at the bottom, right? You see the 56 day average.

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00:16:19.439 --> 00:16:24.029

Of course, of course, these products, I mean, these images will be we projected later on.

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00:16:24.029 --> 00:16:33.539

So, in general, we deliver 12 maps every week, which includes 71,428 and 56 8.

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00:16:33.539 --> 00:16:42.029

Average products for relative humidity, temperature and bpd. So in general, in total we deliver 12 maps.

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00:16:42.144 --> 00:16:49.734

Every week, um, how about the color coding?

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00:16:49.734 --> 00:16:53.904

How can we interpret the color coding in the earth products?

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00:16:53.904 --> 00:17:03.654

This is on the right side this is an example of the earth base surface relative humidity a 14 day product for Tuesday February 1st, 2022. this is what?

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00:17:03.654 --> 00:17:13.614

The authors see, and this is what we see in the packages that are delivered to us every week, which has been re, projected images that we saw in the previous slide.

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00:17:13.614 --> 00:17:20.574

So uses a standard color bar that assigns colors based on the parameters percentile ranking.

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00:17:20.574 --> 00:17:26.514

And we follow the exact same color scheme for our job images. for our job images

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00:17:26.759 --> 00:17:36.029

For example, the regions that are red, we need the 3 extreme drought brown the for exceptional droughts. These are harder dryer.

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00:17:36.029 --> 00:17:42.119

For habit, Holly, rapid factor than 9599% of all weekly averages.

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00:17:42.119 --> 00:17:50.729

Collected since their mission was launched in September 2002. so so in summary we felt the exact same.

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00:17:50.729 --> 00:18:00.299

Color scheme, so some note about our black or white pixels, so black pixels indicates missing or bad data.

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00:18:00.299 --> 00:18:08.339

Blue pixels indicate cooler weather or lower evaporated index or non dry conditions.

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00:18:08.844 --> 00:18:15.474

Draft conditions and white indicates near normal conditions and, as, you know, and the final USDA maps,

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00:18:15.504 --> 00:18:20.154

all the white and blue pixels have been incorporated into the White pixel category.

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00:18:20.429 --> 00:18:26.369

Which means are the missing near normal or in general non drowsy data.

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00:18:31.134 --> 00:18:37.704

Now, in the next section, I like to go over the methodology, uh, that how do we derive, uh,

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00:18:37.734 --> 00:18:44.664

our drought indices or how do we finally can you interpret the imagery? So I'll go over several steps.

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00:18:44.909 --> 00:18:53.159

The 1st step is our data source. Um, so we use, uh, errors version 6, a daily.

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00:18:53.159 --> 00:19:02.519

Uh, daytime level to infer only standard product. So, these, uh, so this kind of product provides 2.

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00:19:02.519 --> 00:19:07.529

Uh, quantities, which is surface temperature and surface relative humidity.

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00:19:08.034 --> 00:19:17.604

So, the note here is that the 1st, 7 days of temperature and relative humidity data, come from our near real time product.

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00:19:17.849 --> 00:19:20.969

And all this sequence daily data sets.

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00:19:20.969 --> 00:19:26.994

Come from the final archive standard product so there are 2 types of sign of products.

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00:19:27.024 --> 00:19:34.284

1 is in near real time and 1 disease archive, standard product. So we 1st.

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00:19:34.589 --> 00:19:41.009

Uh, get a raw surface air, temperature and surface relative humidity, daily data.

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00:19:41.009 --> 00:19:49.649

What we do next is that we calculate the DuPont temperature using the temperature and humidity information.

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00:19:49.649 --> 00:19:58.374

And this is necessary for a calculation of so the key viewpoint in temperature follows this formulation you see,

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00:19:58.374 --> 00:20:07.134

and the spots which in in general or in summary depends on temperature and relative humidity.

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00:20:08.519 --> 00:20:17.909

After we calculate the DuPont temperature, it's time to calculate the so follows this formulation here in this box.

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00:20:17.909 --> 00:20:25.709

Which depends on air surface temperature and viewpoint temperature, which was calculated in the previous step.

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00:20:25.709 --> 00:20:34.049

So, now we have all the quantities we have their temperature, we have relative humidity and we have.

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00:20:34.049 --> 00:20:37.319

What we do, and the next step is that we.

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00:20:37.614 --> 00:20:47.604

We create a custom half a degree greeted product so we get these all 3 daily data sets and we grit them or bend them in

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00:20:47.604 --> 00:20:48.714

half a degree events.

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00:20:50.934 --> 00:21:00.354

And lastly, uh, it's time to calculate the drought indices. So, as we know, we need a climate.

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00:21:01.319 --> 00:21:10.139

Uh, for generating the draft index, so, in the next slide, I'll show you how our, our methodology.

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00:21:10.139 --> 00:21:15.414

Is derived, okay,

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00:21:15.444 --> 00:21:25.104

let's say we would like to derive a climate psychology for a 7 day drought product for the target week of June

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00:21:25.104 --> 00:21:26.934

23rd to June 29th 2021.

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00:21:26.934 --> 00:21:33.654

so, what we do is that a typical climate topology would consist of this red rectangular box here,

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00:21:33.654 --> 00:21:43.584

which includes the 7 day average of for the week of June 23rd to June 29th for all the years and the

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00:21:43.584 --> 00:21:51.204

mission going back from 2021 all the way to 2003, which is the year that the earth's mission was launched.

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00:21:51.204 --> 00:21:56.874

So this would give us in total and 19 data points but this is a relatively short claim methodology.

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00:21:56.874 --> 00:22:05.484

So, what we do is that to generate progressively robust climate tells you, we include additional points, which using a method.

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00:22:05.484 --> 00:22:15.353

I'll explain the bids, which has been used commonly in the literature. So, what we do is that we add the points in this yellow box here.

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00:22:15.353 --> 00:22:21.174

the literature so what we do is that we add the points in this yellow box here

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00:22:21.894 --> 00:22:31.494

So, what we do here, if you focus on the 1st year, what we do is that we slide the time window of June 23rd, June 29th,

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00:22:31.494 --> 00:22:40.704

1 day backwards and we calculate the 7 day average of for the target week of June, 22nd and June 2008. second and june two thousand and eight

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00:22:40.949 --> 00:22:50.154

And then we slide this time window, 1, day, more backwards and we calculate the 7 day of June, 21st, June, 27,

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00:22:50.154 --> 00:22:59.844

and we do the same sampling process until we calculate the 7 day. Repeat the average for the target week of June 16th. june sixteen th

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00:23:00.089 --> 00:23:06.509

To June 22nd, so we'll repeat the same sampling process for all other years.

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00:23:06.509 --> 00:23:14.579

Until we go back all the way to 2003 for the year that the air submission was launched. So this would give us.

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00:23:14.724 --> 00:23:23.334

19 times 8, which is 152 points of climate change, which is a robust terminology now, we can use to calculate or generate our trout indices.

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00:23:23.364 --> 00:23:25.914

generate our trout indices

198

00:23:31.649 --> 00:23:36.474

And the last step, we need to compare our current data our target week.

199

00:23:36.474 --> 00:23:41.874

For example, we are experiencing against the climate topology to update the drought status.

200

00:23:42.059 --> 00:23:50.909

So, to that end, we calculate for reuse the empire called Green Gordon probably percentiles from 0 to 100.

201

00:23:50.909 --> 00:23:55.529

For all 3 quantities, relative, humidity, temperature and.

202

00:23:55.529 --> 00:24:02.004

So, to, for green garden probability calculation, we need to 1st rank our data.

203

00:24:02.244 --> 00:24:09.924

So we rank our data from the smallest for relative humidity and from the largest for and temperature.

204

00:24:10.259 --> 00:24:13.589

And then we follow this formulation to the rank.

205

00:24:14.094 --> 00:24:19.764

Of the non 0 data, minus point, 44 over end, which is our total sample size. +12.

206

00:24:19.794 --> 00:24:27.924

So what it would give us at the end is a value between 0 and 100 meaning a low numbers are generating very extreme,

207

00:24:27.924 --> 00:24:32.154

dry drought conditions and very high numbers. very high numbers

208

00:24:32.489 --> 00:24:37.079

Shows a very wet or non trout conditions.

209

00:24:42.534 --> 00:24:49.344

All right. Um, so this was about the methodology that how we derive our drought industries.

210

00:24:49.374 --> 00:24:53.424

So, in the next step, I'd like to go over 3, independent case studies.

211

00:24:53.669 --> 00:25:03.569

The 1st 1 is going to be 2012 methods, Flash trout. The 2nd case study will be 2019, South East slash route.

212

00:25:03.569 --> 00:25:13.284

And then the 3rd, 1 is a, the current route we are experiencing this in the Western us between 20 and 2022 Western U. S. throughout. western u s throughout

213

00:25:15.054 --> 00:25:19.674

Note here is that we evaluate our airspace throughout indicators to re,

214

00:25:19.674 --> 00:25:27.264

analysis based standardized presentation index and standards storage, moisture index.

215

00:25:28.164 --> 00:25:37.914

We use the modular drought threshold of 25th percentile for the case of simplicity. We're going to only showcase the earth drought indicator or.

216

00:25:37.914 --> 00:25:38.784

indicator or

217

00:25:40.049 --> 00:25:49.109

And we used the typical climate calculation of using only the same block of time, average over each year of the mission. In other words.

218

00:25:49.109 --> 00:25:56.279

We do not use the I explained before this is for the hands of simplicity and also consistency.

219

00:25:57.204 --> 00:26:03.084

And the main focus of these case studies will be under drought concept detection,

220

00:26:03.354 --> 00:26:07.434

which is a strength of our aerospace indicators.

221

00:26:09.804 --> 00:26:14.004

Okay, uh, let's start with the 1st case study, which is 2012, Midwest, Flash trout.

222

00:26:14.034 --> 00:26:23.814

Uh, this is a time series of development of this trout, according to 3 different indicators. We have a 2 month. a two month

223

00:26:25.169 --> 00:26:30.869

We have a 2 month and a 2 month so the blue line.

224

00:26:30.869 --> 00:26:37.439

Here indicate the, the red line in the case presentation, or.

225

00:26:37.439 --> 00:26:41.639

And the yellow line indicates the soil wants sure or.

226

00:26:44.129 --> 00:26:48.419

If you look at the onset of the drought, it it is clear.

227

00:26:48.419 --> 00:26:56.759

That the has been able to detect the drought for several months prior to precipitation and so moisture.

228

00:26:56.759 --> 00:27:05.969

And, uh, from precipitation to, so I'm not sure if there is a small lag time, which is expected as we know presentation response, but some delay.

229

00:27:05.969 --> 00:27:10.859

Sorry, sorry, moisture responds but some delay compared to presentation.

230

00:27:10.859 --> 00:27:17.999

And when you look at the recovery, the presentation, uh, recovers earlier than the other 3.

231

00:27:17.999 --> 00:27:23.399

Other 2, um, and we, if you look at the soil merger again, we see the lag.

232

00:27:23.399 --> 00:27:32.514

From precipitation recovery to so I want you to recovery and the shows, the recovery of the trout almost simultaneously so much.

233

00:27:32.634 --> 00:27:42.324

So you see here that the errors, the has been able to detect a trout signal, which might otherwise be overlooked.

234

00:27:42.569 --> 00:27:44.784

By other indicators in this case,

235

00:27:46.643 --> 00:27:54.474

and if we look at the spatial maps in this slide of the drought onset so, in the 1st row,

236

00:27:54.774 --> 00:27:57.534

you see the spatial maps for errors.

237

00:27:58.709 --> 00:28:02.789

On the 2nd row you see for.

238

00:28:02.789 --> 00:28:09.209

And the 3rd row you see for, and the last row, you see the maps.

239

00:28:09.209 --> 00:28:16.589

And each column represents 1 month. So we go from April 2012 to May.

240

00:28:16.589 --> 00:28:26.429

To June, and then to July 2012, if you start with April, we see that the clear signs of the drought in the Midwest region.

241

00:28:26.429 --> 00:28:29.424

Um, from April using the bpd,

242

00:28:29.484 --> 00:28:38.904

but there is no clear signs of there's no signs of drought using and the USDA map when we continue to May, we're still in a drought condition.

243

00:28:38.904 --> 00:28:48.774

The Midwest by precipitation starts to show some signals of drought in the Midwest and there is still no signs of drought by or so I'm not sure.

244

00:28:49.049 --> 00:28:53.999

And the, some, some, normally dry conditions and region.

245

00:28:53.999 --> 00:28:59.189

Like, June, uh, both and precipitation show a similar pattern.

246

00:28:59.189 --> 00:28:59.519

Uh,

247

00:29:00.444 --> 00:29:10.194

it still shows a smaller area and drought compared to the rest of 2 and then we start to see some moderate and

248

00:29:10.194 --> 00:29:14.334

severe drugs a little bit severe drought conditions in the Midwest the USDA map.

249

00:29:14.789 --> 00:29:21.509

And finally, by July, 2012, all maps show, almost similar patterns.

250

00:29:21.509 --> 00:29:27.834

Uh, including what we see in USA, and again, when you see, the signals is clear that, uh,

251

00:29:27.864 --> 00:29:33.714

the has been able to show spatially also the development of this route earlier than other.

252

00:29:34.464 --> 00:29:43.644

Indicators the next case study was is going to be the 2019 South East

253

00:29:43.644 --> 00:29:47.814

flash route, which was a very also. a very also

254

00:29:48.299 --> 00:29:54.749

Um, a very unique drought. Um, so this drug developed a very abruptly.

255

00:29:54.749 --> 00:30:03.144

Uh, by, uh, fall 2019, so the conditions of drought will very rapidly, and also they, uh, recover rapidly,

256

00:30:03.174 --> 00:30:07.224

which is a classic signs for Flash route. for flash route

257

00:30:07.499 --> 00:30:13.379

So, when you look at the development of the drought, we see that all 3 indicators.

258

00:30:13.794 --> 00:30:23.544

Show the onset almost simultaneously all the contributor development of this sort of trout we see all bpd 1, month, 1,

259

00:30:23.544 --> 00:30:26.454

month and 1 month. So, or solid moisture.

260

00:30:26.994 --> 00:30:34.884

And what happens is that precipitation shows a slightly earlier signs of recovery and then we PDF.

261

00:30:34.884 --> 00:30:39.684

So, I'm not sure show the recovery of this trout almost simultaneously. Again.

262

00:30:39.684 --> 00:30:46.374

This was a very flash route with rapid initiation and rapid kind of recovery.

263

00:30:46.649 --> 00:30:56.099

How about if you look at the spatial maps again, in this case, we are showing each row 1 indicator. We see that data pressure deficit.

264

00:30:56.099 --> 00:31:01.379

Precipitation soil moisture and the maps and.

265

00:31:01.379 --> 00:31:08.579

The 1st column is for August 2019 by August, we don't see any signs of drought by any of the maps.

266

00:31:09.384 --> 00:31:10.584

But, by September,

267

00:31:10.824 --> 00:31:20.484

we see the clear spatial signs of rapid development of the trout in September 2019 by precipitation and so in moisture we see a little bit of

268

00:31:21.144 --> 00:31:25.404

a abnormally dry conditions in the Southeast region where the U. S.

269

00:31:25.404 --> 00:31:33.984

but not in general, most areas showing your normal conditions when we move on to October 2019. to october two thousand and nineteen

270

00:31:34.259 --> 00:31:40.589

We see that VP still showed some sort of a drought conditions.

271

00:31:40.589 --> 00:31:48.324

And the Southeast precipitation shows, very clearly very wet conditions and so I'm not sure sure.

272

00:31:48.324 --> 00:31:52.524

There's still some drought conditions, similar pattern to what we see in the bpd.

273

00:31:52.854 --> 00:32:00.504

And by October, we are seeing some signs of drought in Southeast region, like moderate and severe drought conditions.

274

00:32:01.764 --> 00:32:10.584

By November, all the conditions recover and we don't see any sort of a drought in any of our indicators.

275

00:32:10.859 --> 00:32:19.499

So, in this case, so the has been contributing together with presentation and so much we see the clear signs up.

276

00:32:19.499 --> 00:32:23.639

Contribution that development of this route along with other.

277

00:32:23.639 --> 00:32:30.864

Uh, indicators, uh, before I move on to the next case study,

278

00:32:30.894 --> 00:32:39.294

I would like to show you what the actual maps that we delivered to for this particular drought looks like.

279

00:32:39.569 --> 00:32:43.049

So this is a 28 day product.

280

00:32:43.049 --> 00:32:46.409

Uh, for August 2019.

281

00:32:46.409 --> 00:32:56.034

You see, this is a V. P. D. and you see, you start to see some sort of a trial, uh, abnormally dry in some moderate, mild conditions by September.

282

00:32:56.034 --> 00:32:56.574

We see.

283

00:32:56.994 --> 00:32:59.874

More severe and extreme conditions in this case.

284

00:33:00.144 --> 00:33:09.084

And by October, we still see some conditions of drought but then by November these conditions rapidly recover and these,

285

00:33:09.534 --> 00:33:19.224

the difference between these valves. And the prior ones is that these uses the full climate topology, including the additional point, explain the methodology section to generate these masks.

286

00:33:19.224 --> 00:33:24.204

But the, the patterns are very similar to what we saw in the previous slide.

287

00:33:24.539 --> 00:33:30.119

And these are as a reference how the maps look like for this same.

288

00:33:30.119 --> 00:33:35.454

A period of time again, as, you know, these maps will be re,

289

00:33:35.454 --> 00:33:43.884

projected for the maps that you guys will see as the USB authors to the same projection that the USDA map has.

290

00:33:44.129 --> 00:33:51.659

With the color coding is very similar. Okay, Ali raiza yes.

291

00:33:51.659 --> 00:33:58.884

Uh, for this particular use case, uh, uh, we had a few questions actually, maybe it makes sense to to discuss those.

292

00:33:58.884 --> 00:34:04.044

Now, there was a question about the percentiles.

293

00:34:04.289 --> 00:34:11.699

And that was from Richard time they are based on a history is a question. Are they based on history from 2002 to present.

294

00:34:13.884 --> 00:34:21.594

This is Richard. You I see you answered that in a subsequent slide to my question. So thank you for that. Yeah, it's 2002. 2003 to present.

295

00:34:21.684 --> 00:34:28.104

And then you do that method where you increase the number of data points. increase the number of data points

296

00:34:28.379 --> 00:34:35.429

Thank you. Yeah. Great. And then there was another question for the case 1.

297

00:34:35.429 --> 00:34:39.479

In this case, 1 time series for a grid point.

298

00:34:39.479 --> 00:34:46.679

In the Midwest, or sorry is the case 1 time series for a grid point in the Midwest, or especially average.

299

00:34:46.679 --> 00:34:53.189

Time series, this is for a especially average time series for the same.

300

00:34:54.389 --> 00:35:02.939

For this facial box yeah, I think the question is, that is this time series.

301

00:35:02.939 --> 00:35:10.584

Sorry, this time is this time series for a specific grid, or for 8 bucks and this is for a,

302

00:35:11.034 --> 00:35:13.584

all the Midwest box Midwest region.

303

00:35:13.859 --> 00:35:18.029

And then there was the same question for case to.

304

00:35:18.029 --> 00:35:24.569

Yeah, the same applies here. This is not for I averaged of all the numbers.

305

00:35:24.569 --> 00:35:28.619

It's for a average or box region, not for a particular grid.

306

00:35:32.909 --> 00:35:36.659

And then finally, Dave, somewhere, what timeframe.

307

00:35:36.659 --> 00:35:41.639

Is the, you're using in the case study.

308

00:35:41.639 --> 00:35:51.594

And he said, it looked like it was 1 month. Yeah. For the Midwest route is a 2 month for a South East route as, as a 1 month.

309

00:35:55.829 --> 00:36:00.389

Okay, great. Thanks.

310

00:36:00.389 --> 00:36:07.589

Okay, great. All right so I can move on to the last case study.

311

00:36:07.589 --> 00:36:10.859

Which is the Western U. S drought.

312

00:36:12.984 --> 00:36:20.334

Okay, this drought, which we haven't experiencing over the last 2 years again and this 1 we are going to focus on the onset.

313

00:36:21.324 --> 00:36:27.564

So this droughts, the conditions of drought developed slowly over time over several months.

314

00:36:27.924 --> 00:36:33.234

And again, we look at the time series of this is a 3 month V.

315

00:36:33.234 --> 00:36:38.694

P D3 months and 3 months if you look at the time series. series

316

00:36:41.214 --> 00:36:51.204

The development of this drought, it shows that again, all the 3 indicators have been contributing the development development of this trout almost at the same time.

317

00:36:53.729 --> 00:37:01.764

And again, the contribution of in the development of this route is clearly shown in this photo. If you look at the initial recovery.

318

00:37:01.944 --> 00:37:04.794

So shows recover a little bit faster.

319

00:37:05.064 --> 00:37:05.994

And then we have,

320

00:37:07.554 --> 00:37:17.124

and then we have we see the lag response recovery from the initial recovery from the solid mature compared to the precipitation.

321

00:37:19.614 --> 00:37:28.914

And if you look at the spatial maps for the onset of the drought in August, we see, actually again, we have the 1st column, August 2020.

322

00:37:28.914 --> 00:37:36.744

we have 2nd column September 2020. we have 3rd column, October, 2020, and last call them. october two thousand and twenty and last call them

323

00:37:37.259 --> 00:37:43.499

Is November 2020 and then if you look at the special maps, actually.

324

00:37:43.499 --> 00:37:48.239

The maps are very consistent with each other for all 3 indicators.

325

00:37:48.744 --> 00:37:58.434

Which means that you see the clear signs of trout and the Western U. S. and we look at it is also pretty consistent with what we see in these maps in general.

326

00:37:58.434 --> 00:38:05.394

So, this case study, the contribution of all 3 indicators are clearly shown in the development of.

327

00:38:05.699 --> 00:38:08.789

Uh, this trout, and also with the focus of our.

328

00:38:14.755 --> 00:38:24.595

Now, now let's talk a little bit about the continuity, as I mentioned earlier in the 1st, few slides, the errors instrument is expected to see operations around 2025.

329

00:38:24.595 --> 00:38:25.765

thousand and twenty five

330

00:38:26.040 --> 00:38:35.935

But, uh, standard data, or to continue, uh, 1 of the missions is Chris, which will continue to deliver similar capability.

331

00:38:36.745 --> 00:38:46.405

Chris is a cross tracking for its sounder and is advanced technology Micro. Sounder. So these are on board of jps. S.

332

00:38:47.670 --> 00:38:52.050

Which is joint or satellite system and they construct.

333

00:38:52.050 --> 00:38:58.800

Global atmospheric temperature pressure and moisture profile similar to what hers.

334

00:38:58.800 --> 00:39:03.570

Delivers since 2011, so this mission was launched in 2011.

335

00:39:03.570 --> 00:39:10.230

And is likely that our drug products will continue using the data from the Chris instrument.

336

00:39:10.230 --> 00:39:14.490

The plans are now being considered, but are not in place yet.

337

00:39:18.960 --> 00:39:23.400

Um, how do we validate our products.

338

00:39:23.905 --> 00:39:30.925

In the generation of the earth product so a little note about the validation of the earth's data in general,

339

00:39:31.825 --> 00:39:36.505

the earth processing software is updated every couple of years. 3 to 5 years.

340

00:39:36.750 --> 00:39:42.090

And at the time, the entire mission dataset is reprocessed using the new version.

341

00:39:42.090 --> 00:39:51.475

So, right now we have released the version 7, and during this process, all key variables are validated and compared with independent datasets,

342

00:39:51.505 --> 00:39:55.855

such as from ground based stations, other satellites and re, analysis data sets.

343

00:39:56.100 --> 00:40:05.340

And all the results are published in validation and testing reports, which are open to public. You guys are welcome to check and read on them.

344

00:40:05.340 --> 00:40:12.330

And during this process is level 2 near surface temperature and relative humidity data.

345

00:40:12.330 --> 00:40:18.720

Used to produce the errors drought Maps also validate it as part of this process.

346

00:40:18.720 --> 00:40:20.665

So, in our latest test report,

347

00:40:20.695 --> 00:40:30.415

we have validated all 3 relative humidity and temperature quantities based on the 2 latest versions of hers

348

00:40:30.415 --> 00:40:33.415

data meaning version 6 and versions. 7.

349

00:40:33.930 --> 00:40:39.480

For this validation, we focus on the case study of 2011, major drought in Texas.

350

00:40:39.480 --> 00:40:46.620

In both versions, 6 and versions 7 found to capture the anomaly locations and time series.

351

00:40:46.620 --> 00:40:56.580

Uh, for the 2011 takes us throughout, so, just know this was note about the validation of this, our products.

352

00:40:56.935 --> 00:41:03.595

And lastly, we are, uh, we are happy to announce that the latest version of data version.

353

00:41:03.595 --> 00:41:10.525

7 includes a global daily raw product. This was not included in the version. 6.

354

00:41:11.010 --> 00:41:16.380

So, we have organized the Rob as a little to products.

355

00:41:16.380 --> 00:41:26.035

Which is according to a satellite source path or 45 kilometer resolution. So, this is not greeted. This is a, uh, granular base a database.

356

00:41:26.035 --> 00:41:26.755

database

357

00:41:27.535 --> 00:41:34.765

And the same equations are used to calculate the, as we saw in the development of drug products.

358

00:41:35.965 --> 00:41:44.695

And but the comparison to long term data record is not including available, is not included for this product.

359

00:41:44.695 --> 00:41:47.785

So, basically we do not publish.

360

00:41:47.880 --> 00:41:51.930

Uh, the drought indices, uh, to to the public.

361

00:41:52.165 --> 00:42:01.585

But all the data needed to create a long term pharmacology and hence, and subsequently to calculate the trout indices for temperature humidity,

362

00:42:01.585 --> 00:42:05.365

and are available since 2002. thousand and two

363

00:42:05.670 --> 00:42:10.200

Lastly, the is a.

364

00:42:10.200 --> 00:42:19.620

Uh, also, we, we, we generate quality indicators it's included for each of the data points for.

365

00:42:26.455 --> 00:42:36.025

And lastly, I'd like to talk about some resources. Uh, so we have a dedicated draft webpage at s website.

366

00:42:36.085 --> 00:42:45.715

So if you go to earn the dot Gov slash application, slash route, you see a lot of information about droughts, in fact, all this training materials.

367

00:42:46.285 --> 00:42:50.995

Right now is already published and the website and can be found on the page.

368

00:42:51.270 --> 00:43:00.510

Here is a list of papers I showed for in this presentation and lastly, if you're interested to get the data.

369

00:43:00.510 --> 00:43:06.510

Um, there are multiple ways to do that 1 way is through the data gateway.

370

00:43:06.510 --> 00:43:15.930

And there are civil user guides available for the users, um, on our s website there is a, about the earth's data user.

371

00:43:15.930 --> 00:43:19.650

Guide, which is an entry point for the earth.

372

00:43:19.650 --> 00:43:23.280

Instrument and the information about.

373

00:43:23.280 --> 00:43:29.995

Uh, our mission and but the earth user guides suite is archived at the justice,

374

00:43:30.025 --> 00:43:33.445

which is where you can also download the actual data from.

375

00:43:38.010 --> 00:43:41.250

With that I'll turn it back to Sharon.

376

00:43:43.830 --> 00:43:50.670

Okay, thank you so much Ali raise and we will get to a Q and a.

377

00:43:50.670 --> 00:43:58.470

Uh, and just shortly here, I wanted to let everyone know buddy know about our, our surveys.

378

00:43:58.470 --> 00:44:03.900

And immediately following the, uh, training today, we.

379

00:44:04.045 --> 00:44:13.615

Ask if you would be so kind as to participate in a brief survey. We have a few questions using the mentor meter format.

380

00:44:13.615 --> 00:44:14.965

If you're familiar with that.

381

00:44:15.270 --> 00:44:18.750

Following the training today.

382

00:44:18.750 --> 00:44:26.100

And also, it will help us gauge how much time to allow for.

383

00:44:26.100 --> 00:44:31.020

A longer survey that we would like to occur at some point.

384

00:44:31.735 --> 00:44:39.205

However, many months is needed after this, uh, where, perhaps if you have after this training,

385

00:44:39.205 --> 00:44:43.945

if you decide to use the ears products to give you a period of time to use them.

386

00:44:44.430 --> 00:44:47.820

And, uh, be informed by the process.

387

00:44:47.820 --> 00:44:55.080

At which time, uh, we would like to pick your brain about what you see in terms of the value of products.

388

00:44:55.080 --> 00:45:03.420

Or things that we might do to improve or enhance, or add to those products. So that was just a note about the survey.

389

00:45:04.075 --> 00:45:13.435

Um, next slide so, with that, uh, we can go into a Q and a.

390

00:45:13.465 --> 00:45:14.485

I had a.

391

00:45:14.820 --> 00:45:24.360

Sort of on my timeline here, I think we're a pretty good time. We could, we could take a break up till 1 o'clock and then go into a Q and a.

392

00:45:24.360 --> 00:45:31.770

Is there anybody who, uh, are are any folks interested in just.

393

00:45:31.770 --> 00:45:34.800

Going forward without a break.

394

00:45:36.810 --> 00:45:39.930

Yeah, I'd be interested in going forward without a break.

395

00:45:40.950 --> 00:45:44.190

Okay hello? Hello?

396

00:45:44.190 --> 00:45:48.300

Okay, then let's let's go ahead.

397

00:45:48.300 --> 00:45:52.680

Let's go ahead with that. So, with that, I think, um.

398

00:45:52.680 --> 00:45:56.340

That we have a couple of questions we address, uh.

399

00:45:56.340 --> 00:45:59.820

Most of it was a little bit earlier, uh.

400

00:45:59.820 --> 00:46:07.980

Deborah Beth Ki. I I know I think your question is answered. However, did you want to say anything more about a possible case study?

401

00:46:07.980 --> 00:46:12.780

Including the disappearing snow in California in 2021.

402

00:46:13.375 --> 00:46:23.155

They didn't need that in streams. Okay. No, that's okay. I was just curious. And as soon as I finished typing it, and I saw the Western case study. Okay. That's how it goes.

403

00:46:23.610 --> 00:46:28.860

Very good. Okay. And then I see some, a question from Brad.

404

00:46:28.860 --> 00:46:32.280

I'd be curious to know the false alarm rate.

405

00:46:32.280 --> 00:46:38.310

Cases where heirs to pics short term drought, but no or.

406

00:46:38.310 --> 00:46:42.480

Negligible throughout develops.

407

00:46:44.790 --> 00:46:48.150

Yeah, I, I think that's a great point by Brad.

408

00:46:48.150 --> 00:46:55.740

And this is something, uh, we, we didn't show in this presentation, but it's good to work on that.

409

00:46:55.740 --> 00:46:59.130

And so, uh, do some research about that.

410

00:47:03.720 --> 00:47:09.930

Okay, that's all we had from the chat. Were there any other questions.

411

00:47:09.930 --> 00:47:13.590

Uh, that you had for Ali.

412

00:47:14.700 --> 00:47:19.285

Yeah, this is a Dave some wrong. Yeah, I'd like to know how each in your case studies.

413

00:47:19.285 --> 00:47:28.045

It would be of interest maybe to see how each of the, uh, in the short term. Uh, how each of those play out.

414

00:47:28.075 --> 00:47:33.145

I see you selected ones for each of the case studies, different and their different time steps.

415

00:47:33.745 --> 00:47:41.965

It'd be interesting to see to add those to your current case studies to have the 1 month to month, all the different steps,

416

00:47:41.965 --> 00:47:43.975

and see how each 1 of those performed.

417

00:47:45.925 --> 00:47:51.925

Yeah, I mean, I I mean, when I explored the development of each of these crowds, drought case studies,

418

00:47:51.925 --> 00:47:56.785

I looked at different times that's going from 1 to 3236 and 12 months.

419

00:47:56.785 --> 00:48:06.685

And the reason I picked those wants to show is that they aligns well with the, uh, type of a trial, for example, for. for example for

420

00:48:07.080 --> 00:48:14.815

Uh, the South East route, it was a very flash trout and then we looked at it only 1 month, but for the California 1 or the Western U. S.

421

00:48:14.815 --> 00:48:21.955

trout we looked at the 3 months, which is because we know this was a very kind of slowly developing a drought.

422

00:48:24.595 --> 00:48:29.005

Yeah, that that makes sense. It would be interesting, though also to see. Yeah.

423

00:48:29.065 --> 00:48:38.155

Um, in certain cases when, uh, drought is developed quickly, even in the West during the summer, during these heat waves yeah,

424

00:48:38.185 --> 00:48:42.355

if you use 1 month to see if it's picking that up as well.

425

00:48:42.960 --> 00:48:46.140

Yeah, that's a great suggestion. Yeah.

426

00:48:46.140 --> 00:48:55.920

We would definitely work on that. I think this is Richard. I have a question.

427

00:48:55.920 --> 00:49:02.305

And I looked back at my notes of what you said in your talk, and I think I have the answer. But I'll ask it anyway.

428

00:49:02.755 --> 00:49:10.255

You let's see the product that you're producing for is for the continental, United States, I think.

429

00:49:10.615 --> 00:49:14.845

Yes, but you said there is a global product. Mm. Hmm. And so.

430

00:49:15.150 --> 00:49:19.800

I my question regarding the global product is.

431

00:49:19.800 --> 00:49:23.430

Is it available or can it be generated.

432

00:49:23.755 --> 00:49:30.385

Maps be generated for Hawaii, Puerto Rico U. S Virgin islands and U. S affiliated Pacific islands.

433

00:49:30.805 --> 00:49:34.015

And then I think the answer is, um.

434

00:49:34.290 --> 00:49:39.570

It probably not practical because it has a 45 kilometer.

435

00:49:39.570 --> 00:49:48.480

Resolution and a lot of these Pacific islands are smaller than 45 kilometers and the Virgin Islands probably would be.

436

00:49:48.480 --> 00:49:53.160

Separate from that same same issue. So, um, I'll just.

437

00:49:53.160 --> 00:49:59.550

Throw it out there uh, is it possible or is a product being computed now?

438

00:49:59.550 --> 00:50:09.180

Of the, um, I think it, you said, uh, for Hawaii, Puerto Rico usba and U. S.

439

00:50:10.260 --> 00:50:17.580

Yeah, I mean, we don't have an operational, uh, product right now outside of the.

440

00:50:17.580 --> 00:50:26.485

However, it is possible, certainly to generate product globally as our data covers entire flow.

441

00:50:26.905 --> 00:50:30.865

Um, but, as you said, uh, major issue would be.

442

00:50:31.140 --> 00:50:37.530

Like, Hawaii, or those highlights are too small, and it would be only maybe 1 pixel or 2 pixels.

443

00:50:37.530 --> 00:50:41.550

Yeah, yeah, yeah, yeah, yeah, yeah.

444

00:50:41.550 --> 00:50:48.475

Yeah, um, so I'll, I'll just give you a little bit of background. Why I asked that question. Um, we for the U.

445

00:50:48.475 --> 00:50:55.945

S wrap monitor do 2 pages page 1 is the 50 states in Puerto Rico page. 2 is the U. S. Virgin islands and U. S.

446

00:50:55.945 --> 00:51:02.815

affiliated Pacific islands, so, if we can get any products like this for the page 2 locations, that would be very helpful.

447

00:51:03.025 --> 00:51:06.325

And I'm also I'm in charge here in.

448

00:51:07.470 --> 00:51:12.750

Of the global trade information system, global drought monitor so.

449

00:51:12.750 --> 00:51:17.580

That's another reason why your global product really piqued my curiosity.

450

00:51:18.780 --> 00:51:25.530

I mean, yeah, I mean, for sure we can, we can generate a product for those regions and assess.

451

00:51:25.530 --> 00:51:32.970

To see how the products look like. I mean, we have the data, we have the resources. It wouldn't be hard for us.

452

00:51:32.970 --> 00:51:41.220

For sure, to generate that's kind of products. I think that would be useful. It'd be interesting to see what actually can be done.

453

00:51:41.220 --> 00:51:44.580

Thank you, sir. Sure. Yeah. Thank you.

454

00:51:48.030 --> 00:51:57.000

So something else I want to say regarding the previous question, I hear that. In fact, we are, there is mission. We haven't also thinking about generating.

455

00:51:57.000 --> 00:52:00.300

Um, uh, the.

456

00:52:00.300 --> 00:52:07.950

The daily, I mean, the drought products in a shorter time scales, um, or, uh.

457

00:52:09.090 --> 00:52:18.925

We already delivered weekly at 14 day and 2018. we haven't thought about going into the daily products to see how they look like, in terms of a heat wave.

458

00:52:18.955 --> 00:52:22.945

I think 1 of you asked earlier. you asked earlier

459

00:52:23.250 --> 00:52:30.180

And that's something that we already thought about and we, we wanted to ask you also, if you guys think would be something.

460

00:52:30.565 --> 00:52:31.825

Interesting to look at.

461

00:52:41.215 --> 00:52:45.775

Let me know this is Steve. Steve real quick. When you mentioned about different products.

462

00:52:46.170 --> 00:52:51.270

Just as an idea, because of the way, the ears instrument on the scrap orbits.

463

00:52:51.270 --> 00:52:58.170

A daily data product will be filled with lots of Gores. We're coverage never happened.

464

00:52:58.170 --> 00:53:03.360

So, if you were thinking, in terms of a global short term product.

465

00:53:03.360 --> 00:53:07.620

Your best bet would be, for instance, a 3 day running average.

466

00:53:07.620 --> 00:53:11.100

That would that would guarantee global coverage.

467

00:53:11.100 --> 00:53:15.270

The 1 swap might be a day apart from the swap next to it.

468

00:53:15.270 --> 00:53:23.520

Just because of the mapping orbit so that's something to think of it is, you know, if we're talking about physical changes that change on a daily timescale.

469

00:53:23.520 --> 00:53:27.630

And you look at something at best the 3 day blended average.

470

00:53:28.015 --> 00:53:30.205

You may have lost your information there so

471

00:53:42.265 --> 00:53:45.805

thanks, Steve. Are there any other questions?

472

00:53:46.525 --> 00:53:56.185

We're all raiza. Okay. Um.

473

00:53:56.430 --> 00:54:00.210

Why don't we go to the next slide?

474

00:54:03.000 --> 00:54:11.730

And, uh, before we had bounce off into the survey, I, we had a slide here. We did want to. Thank you very much for your.

475

00:54:11.730 --> 00:54:18.630

Time today, and we hope you found this useful and unlocking sort of the key to the ears drug products.

476

00:54:18.630 --> 00:54:24.930

Also big, thank you to you, Brian for your help and advice and support of this training.

477

00:54:24.930 --> 00:54:28.650

And, of course, if you have any further questions.

478

00:54:28.650 --> 00:54:33.090

After the training, please feel free to contact Ali.

479

00:54:33.090 --> 00:54:38.730

Or myself, and the materials today, including.

480

00:54:38.730 --> 00:54:46.260

The recording will be posted on the air's website so the materials are there. Now, this is the slide set.

481

00:54:46.260 --> 00:54:49.410

And as soon as we get the recording, we'll, we'll have that.

482

00:54:50.065 --> 00:54:56.965

On board as well so when that gets done, can you send me a link in a reminder?

483

00:54:56.965 --> 00:55:00.805

And I'll just dissect that all out and disseminate it to the authors.

484

00:55:01.110 --> 00:55:06.510

Absolutely, I'll make a note that sent recording and link to Brian.

485

00:55:07.590 --> 00:55:13.050

Cause I think, yeah will that will just work best so we can all see it.

486

00:55:13.050 --> 00:55:18.210

Absolutely. Okay. Thank you. That's a good point. And I will absolutely do that.

487

00:55:18.210 --> 00:55:22.800

So, uh, thank you with that. I'm going to end the recording.