



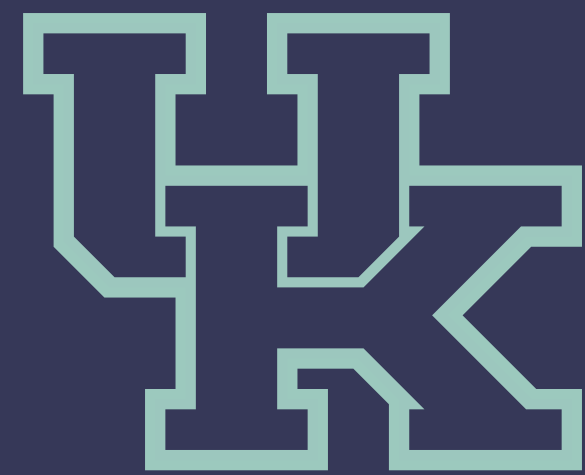
ScootScience

Presented by

AON

Who am I?

Grant Cavanaugh



PhD AgEcon



Ex-Nephila (Lloyd's)



Scout CIO

Who am I?

PhD from program
specialized in
innovative risk
transfer...often on
behalf of the World
Bank

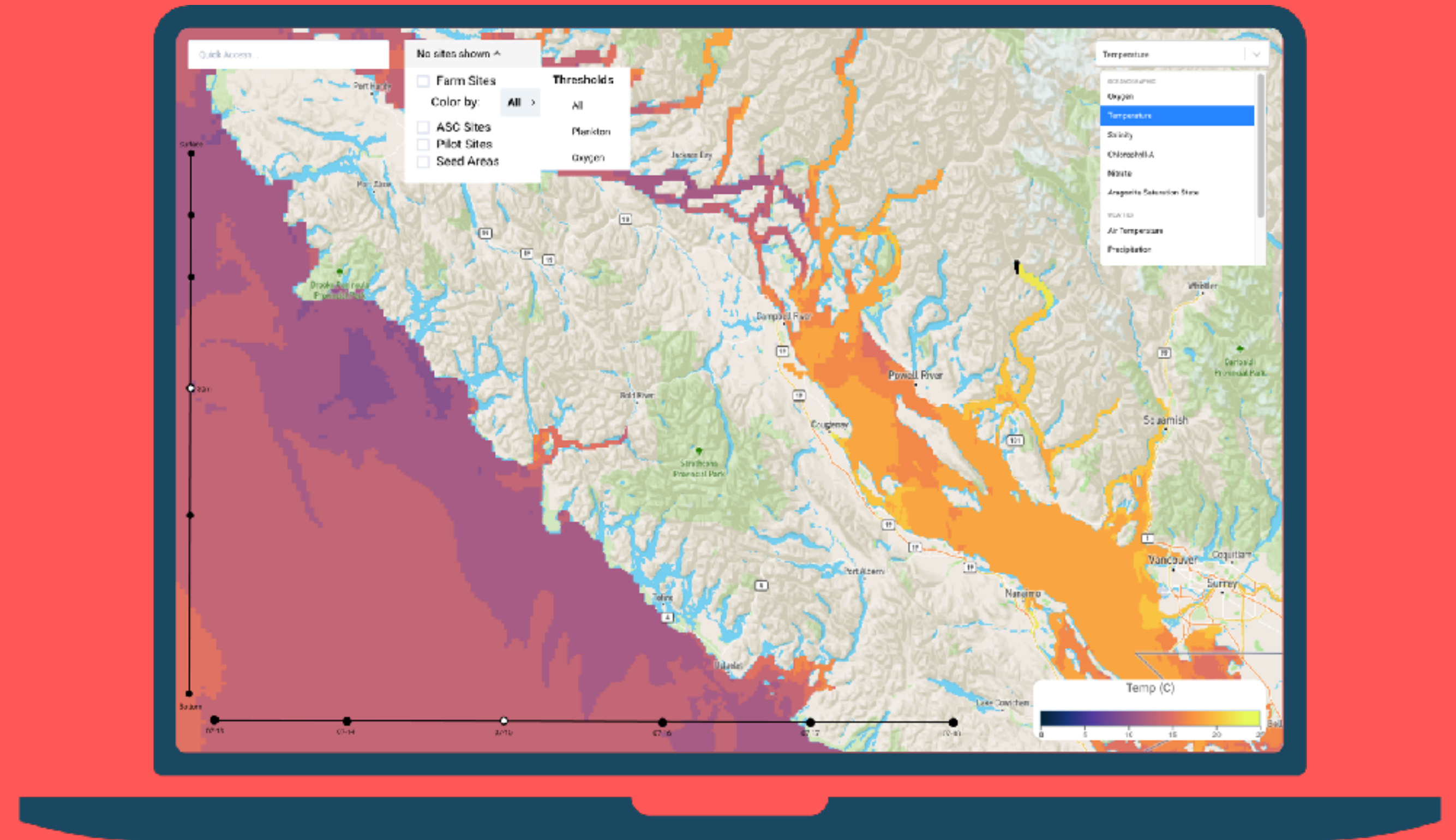
Underwriter
for one of the
largest books of
international
reinsurance for
agriculture in India

Today, helping
bridge between
Scoot's true ocean
experts
and markets
(insurance + finance)



SEASTATE

The complete picture of your ocean conditions.



SEASTATE

At a glance

- Comprehensive, platform-agnostic integration of site data
- Real-time notifications across teams of dangerous conditions
- Map based rendering of farm conditions
- Physics-based ocean modelling
- Site-specific forecasts (oxygen, temp, salinity)
- Integrated fish welfare index
- Secure data entry forms for manual data collection

The dashboard





Smith Cove

Sunrise: 08:17 Sunset: 20:49

6°
 4 knots N

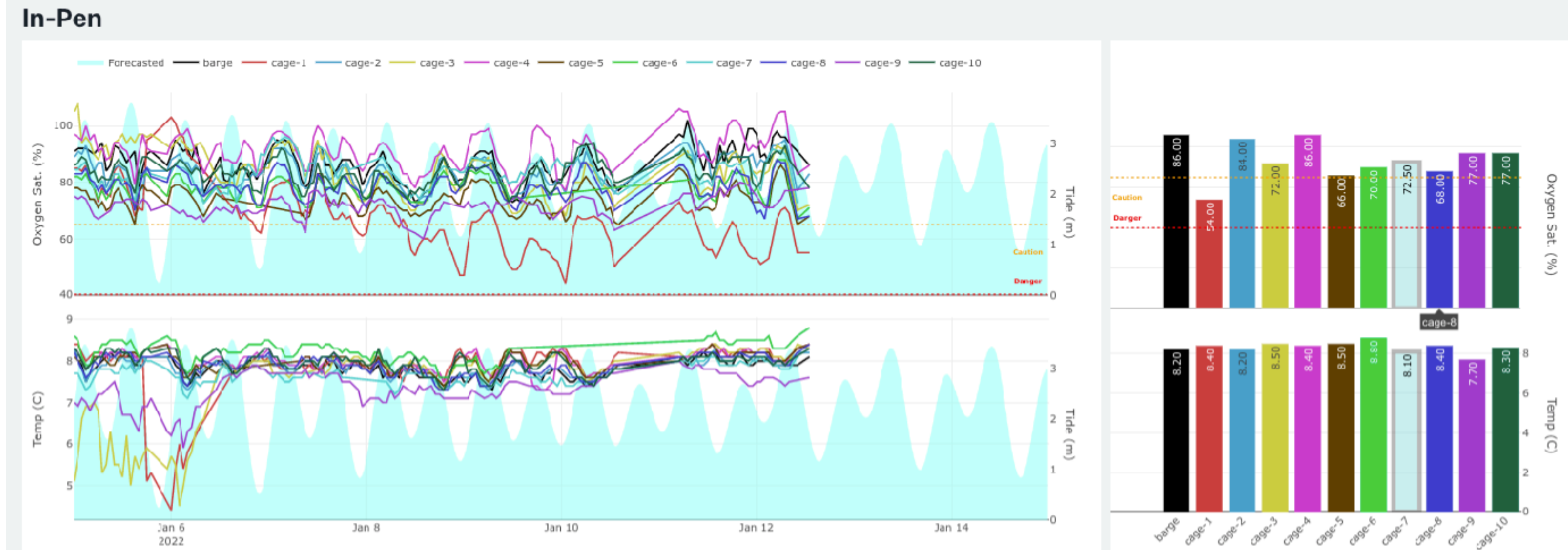
0.0 cm of precipitation expected today

Low Oxygen Forecasted Dangerous DO levels forecasted for cage-K, cage-B, and cage-E beginning on Day 13

Farm Headlines			
Temperature (°C)	9.6-9.8	Total Fish	520334
Oxygen (% sat.)	69.0 - 119.0	Average Weight (kg)	3.7
Salinity (PSU)	25.0 - 35.0	Morts (most recent)	1200 fish on M/DD/YY
Current Tide (m)	1.0m ↑	Morts (week)	3864
Next Tide (m)	High tide 3.6m at 01:42	Feed Use Total (kg)	5614
Average Motile Lice	0.75	SFR Avg	0.175

Environmental Health **30**

Fish Health **57**



Example event



A

3 day forecast (Minimum)

- When to stop feeding
- When to place functional feed order
- Ensure mitigation equipment and protocols are ready

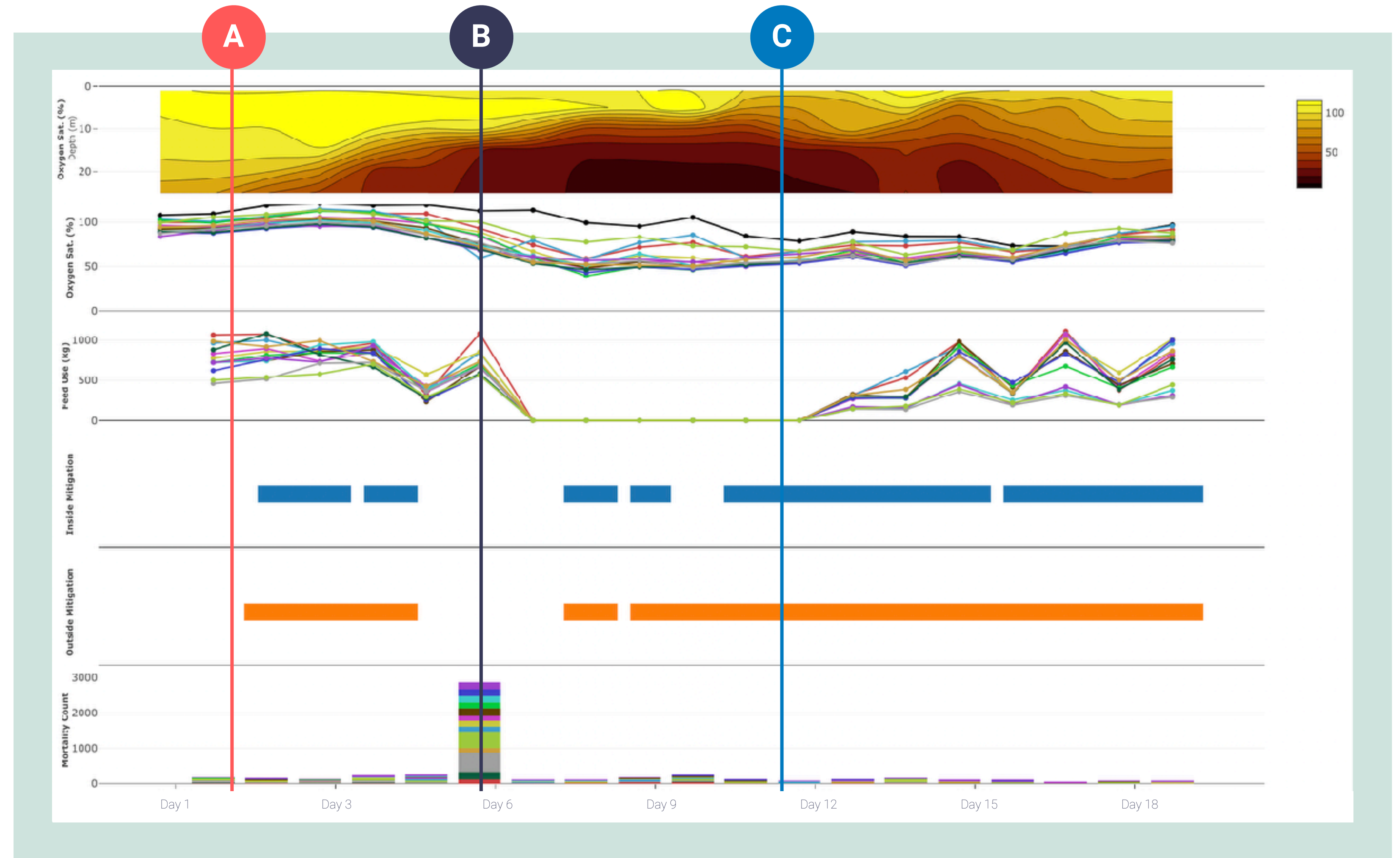
B

Minimize mortality by understanding the timing and magnitude of ocean change

C

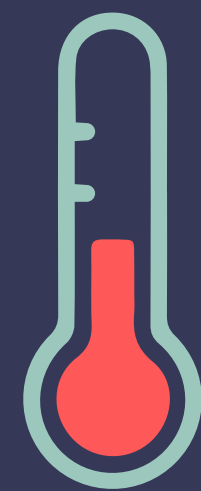
When to start feeding again

- When to start the recovery is as important as the onset of the event

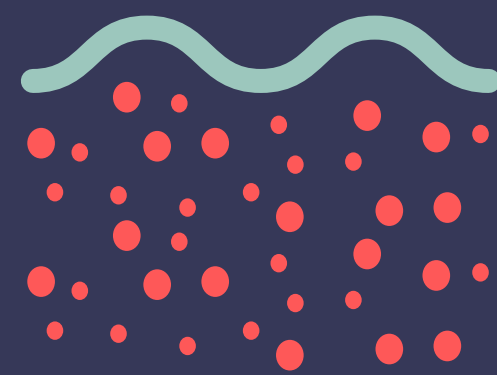


Forecasting and analytics

Put your foundational ocean data to work.



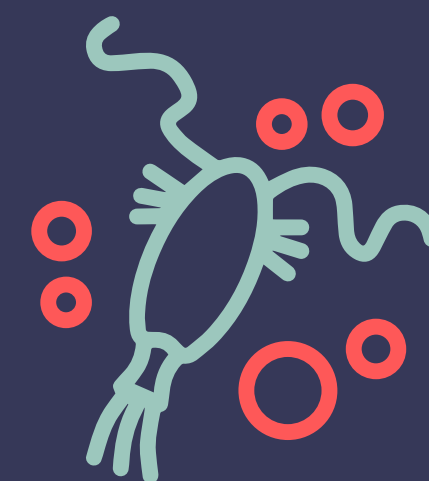
Temperature



Salinity



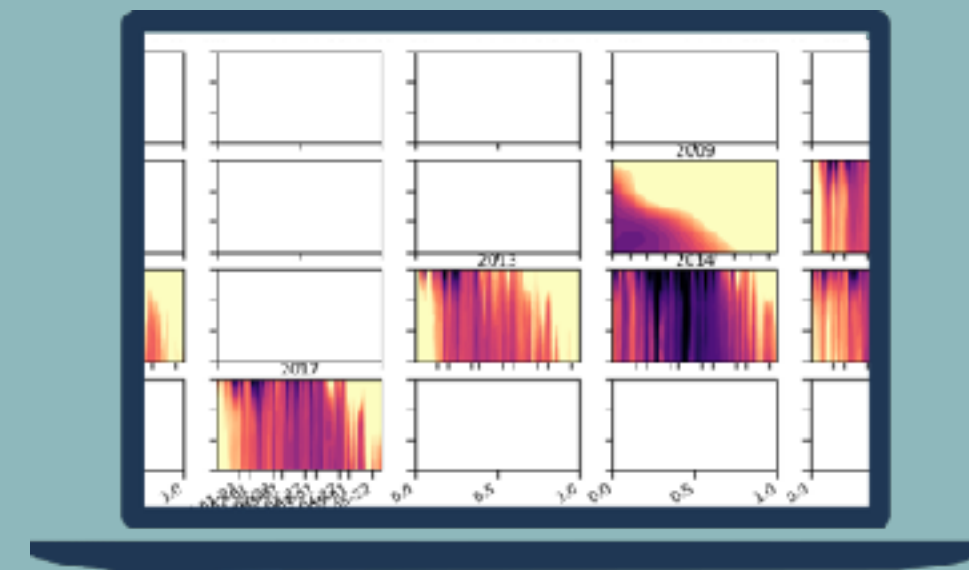
Oxygen



Plankton



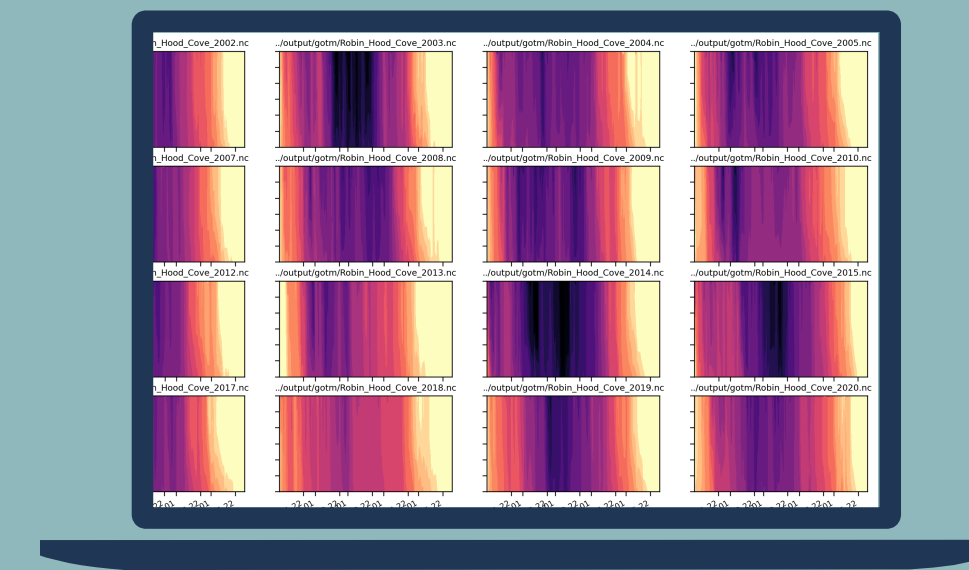
Existing Data Seeding New Models



Sparse site data

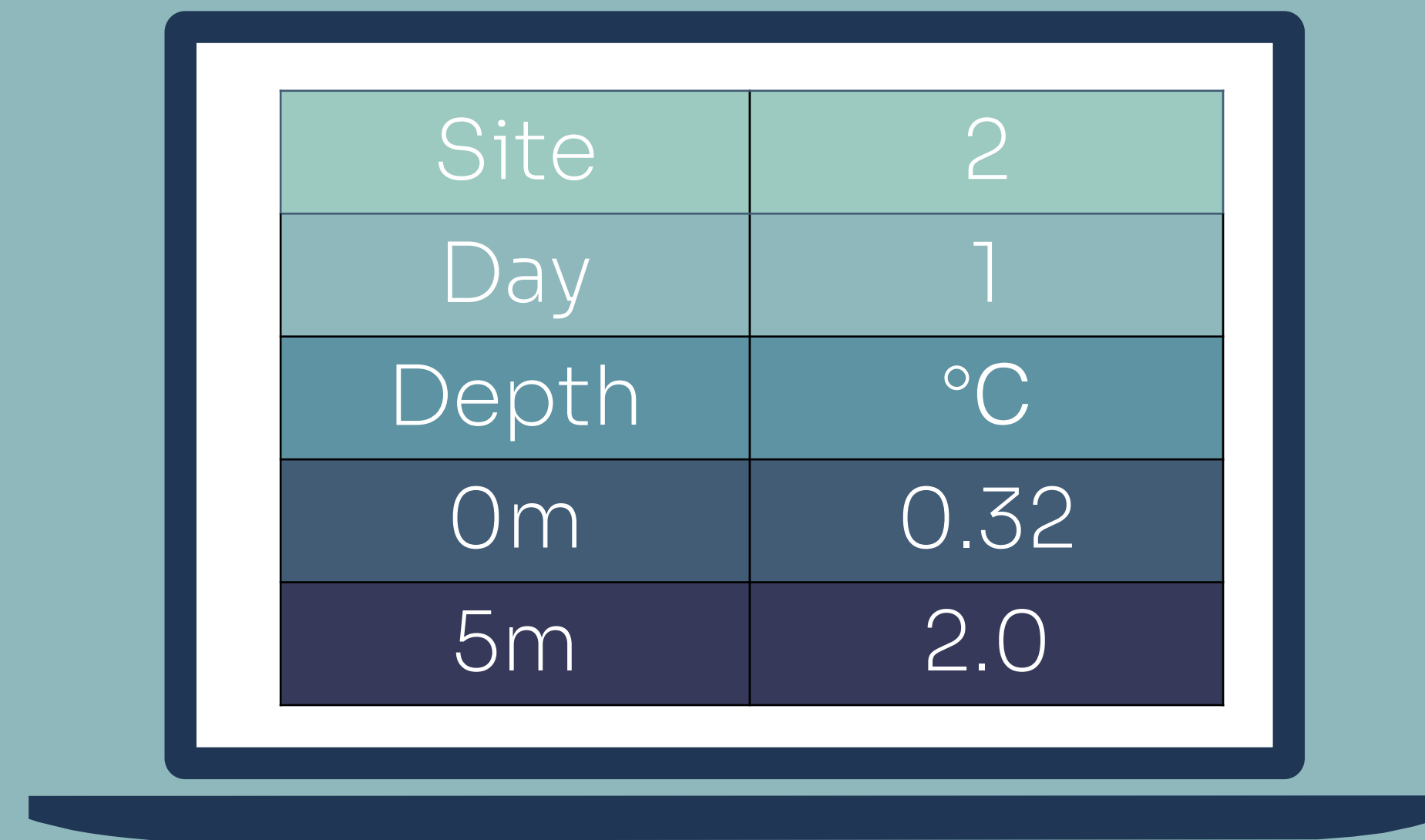


Oceanographic
tools



Full historic record

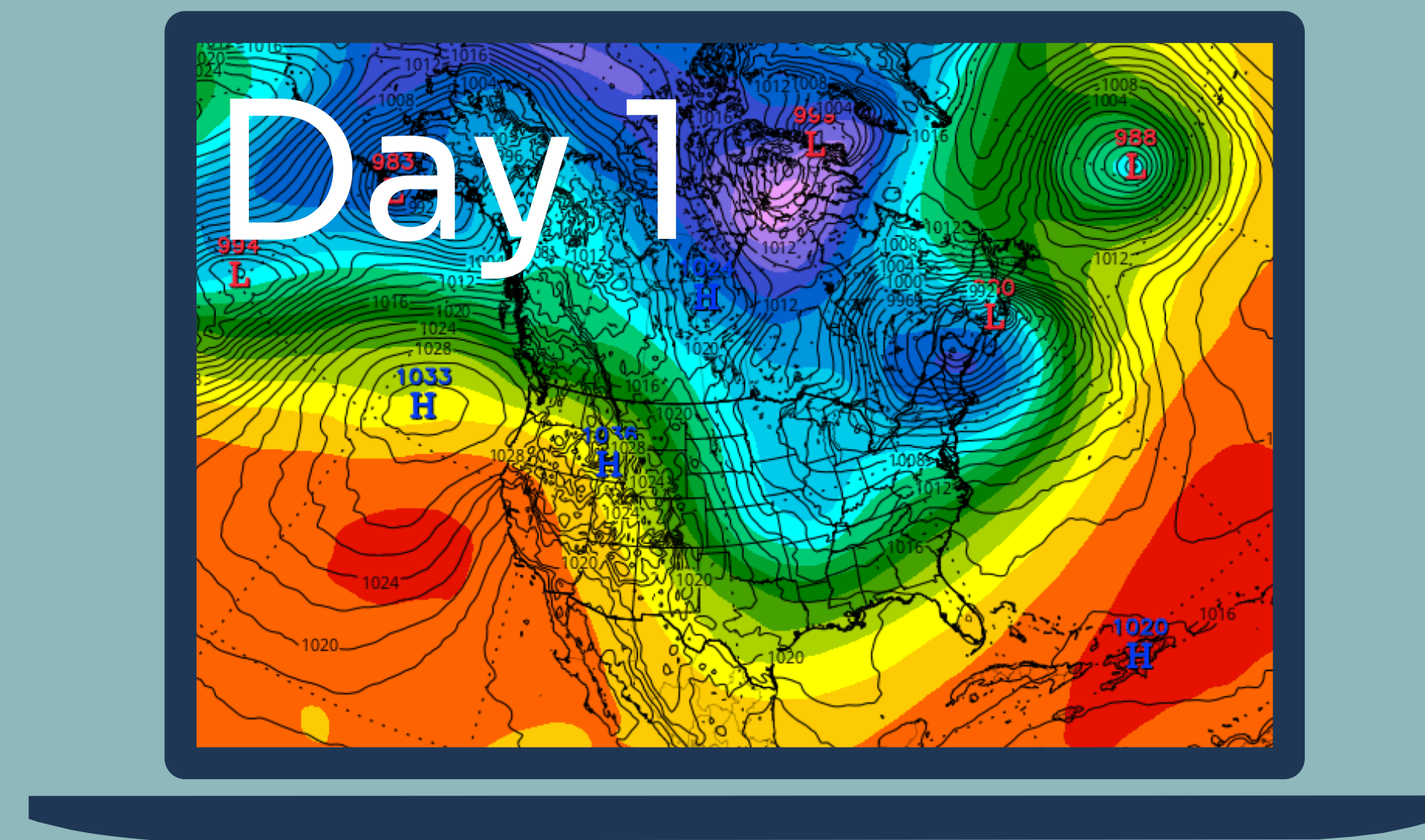
Modeling example:



Site	2
Day	1
Depth	°C
0m	0.32
5m	2.0

Day 1 of coverage: COMPANY
measures temperatures
(Scoot verifies)

Modeling example:



Day 2: Scoot gets weather for
Day 1

Modeling example:

Site	2
Day	1
Depth	°C
0m	0.32
5m	2.0

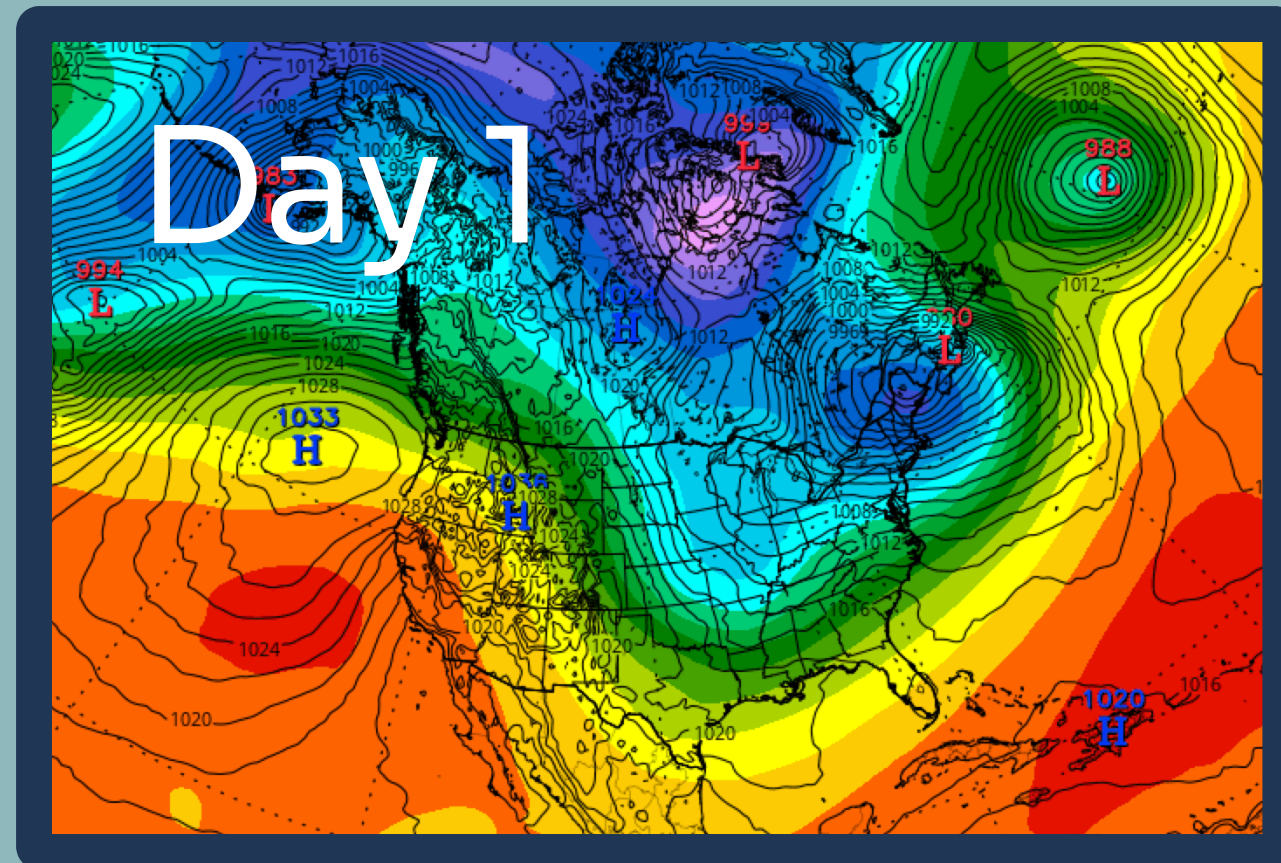
COMPANY's day 1 conditions...

...seed oceanographic model...



Site	2
Day	2
Depth	°C
0m	-0.11
5m	1.28

...to make model's day 2 conditions



...and day 1 weather...

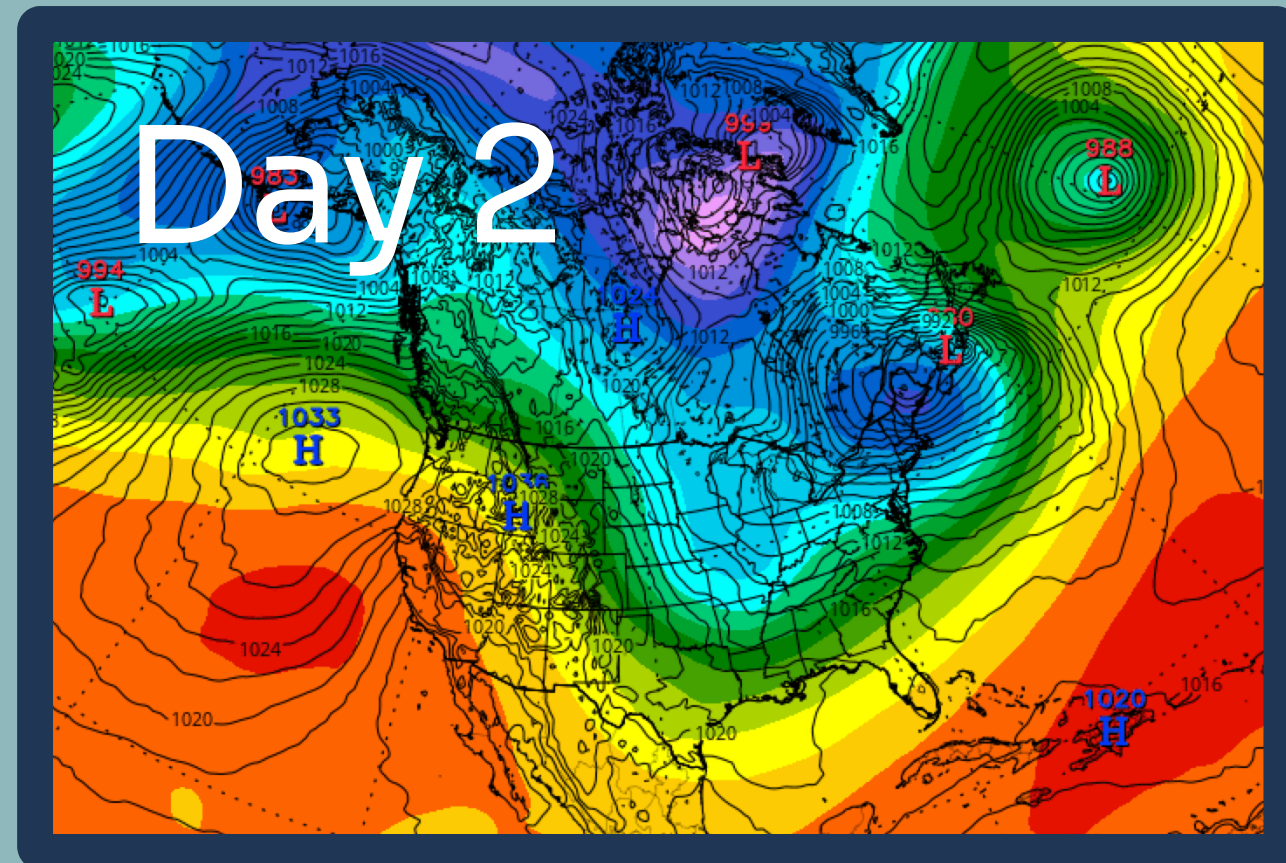
Modeling example:

Site	2
Day	2
Depth	°C
0m	-0.11
5m	1.28

Model's day 2 conditions...



Site	2
Day	3
Depth	°C
0m	0.63
5m	0.75



...and day 2 weather...

...day 3 conditions...

...and so on...

Modeling example:

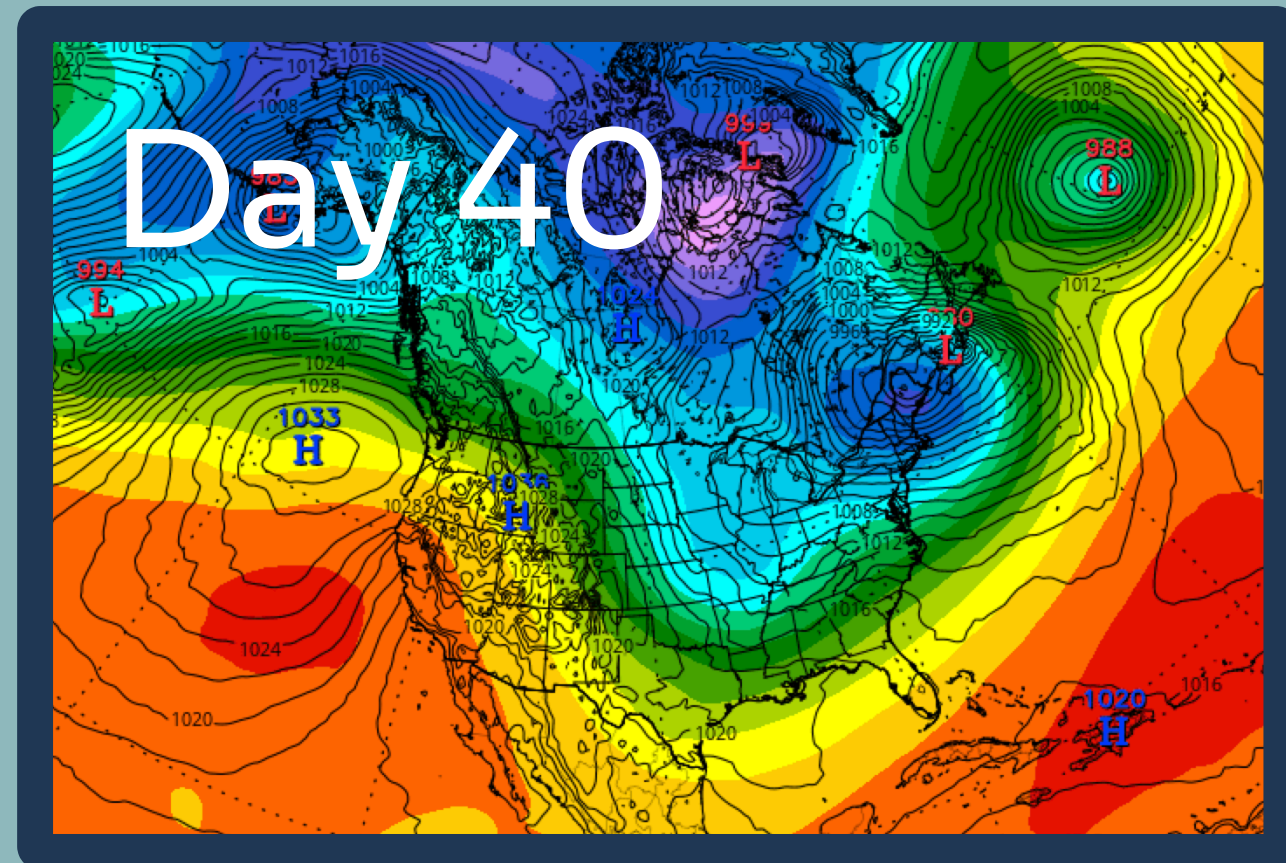
Site	2
Day	40
Depth	°C
0m	-0.45
5m	-0.3

Model's day 40 conditions...



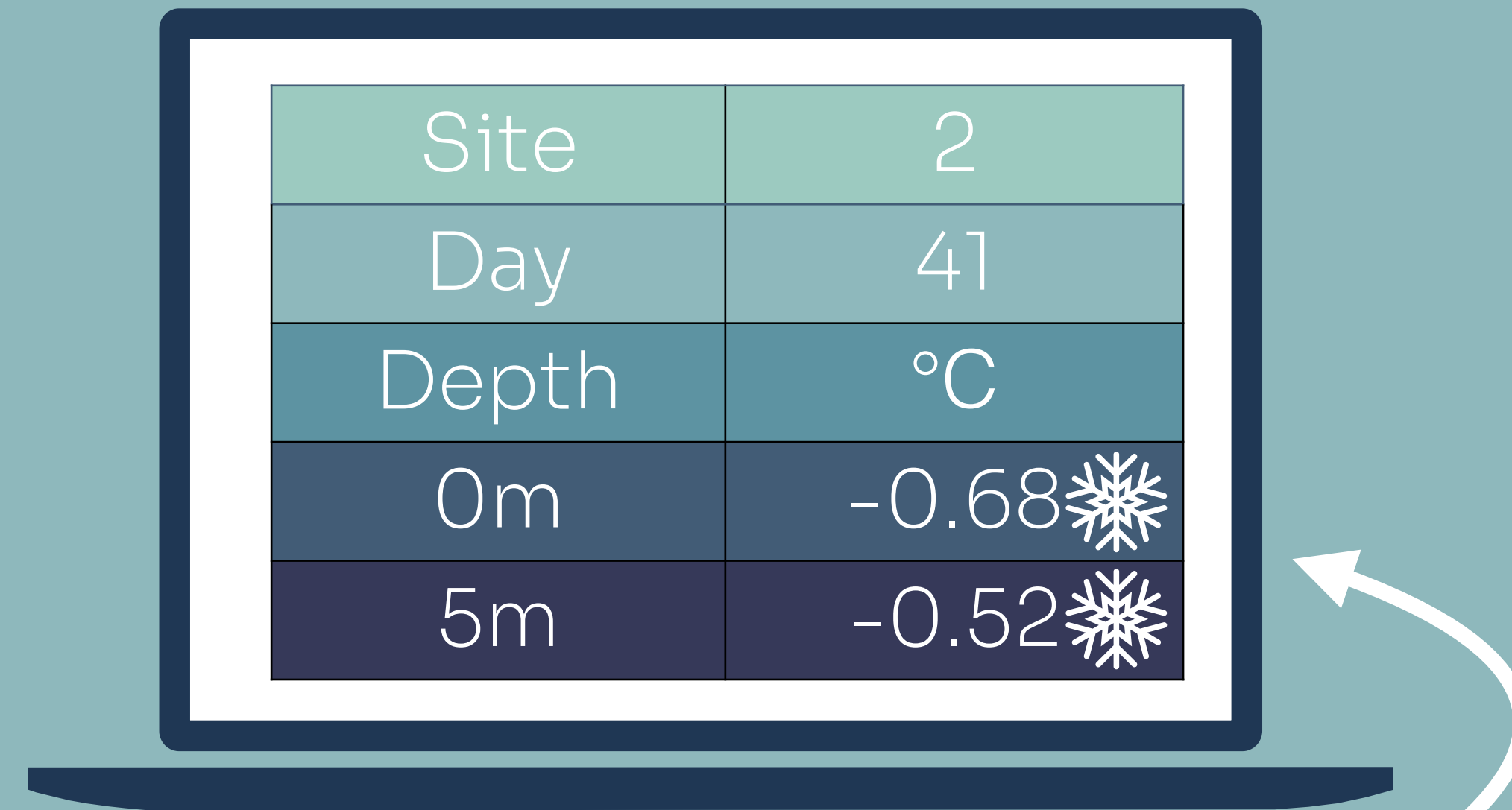
Site	2
Day	41
Depth	°C
0m	-0.68
5m	-0.52

...day 41 conditions



...and day 40 weather...

Modeling example:



Site	2
Day	41
Depth	°C
0m	-0.68 ❄️
5m	-0.52 ❄️

Day 41: Parametric trigger ❄️
hit...payout of site deductible

Low basis risk


Correctly predicted all historic events

Site	Year	Date of Season's First Event	Date of Season's First Event in Model	Difference in days
SITE1	2014	2014-02-08	2014-02-11	3
SITE2	2003	No COMPANY data	2003-02-19	No COMPANY data
SITE2	2014	2014-02-09	2014-02-08	1
SITE3	2003	No COMPANY data	2003-02-19	No COMPANY data
SITE3	2014	2014-02-08	2014-02-08	0
SITE3	2015	2015-03-14	2015-03-15	1

No other years had a day with 0 & 5m temp below -0.5C in either the site records or the model



Thank you.

An aerial photograph of a deep fjord, likely in Norway, showing steep, rocky mountainsides and a calm body of water reflecting the sky. The water is a deep blue-grey color, and the surrounding land is covered in sparse green vegetation and patches of snow or light-colored rock.

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