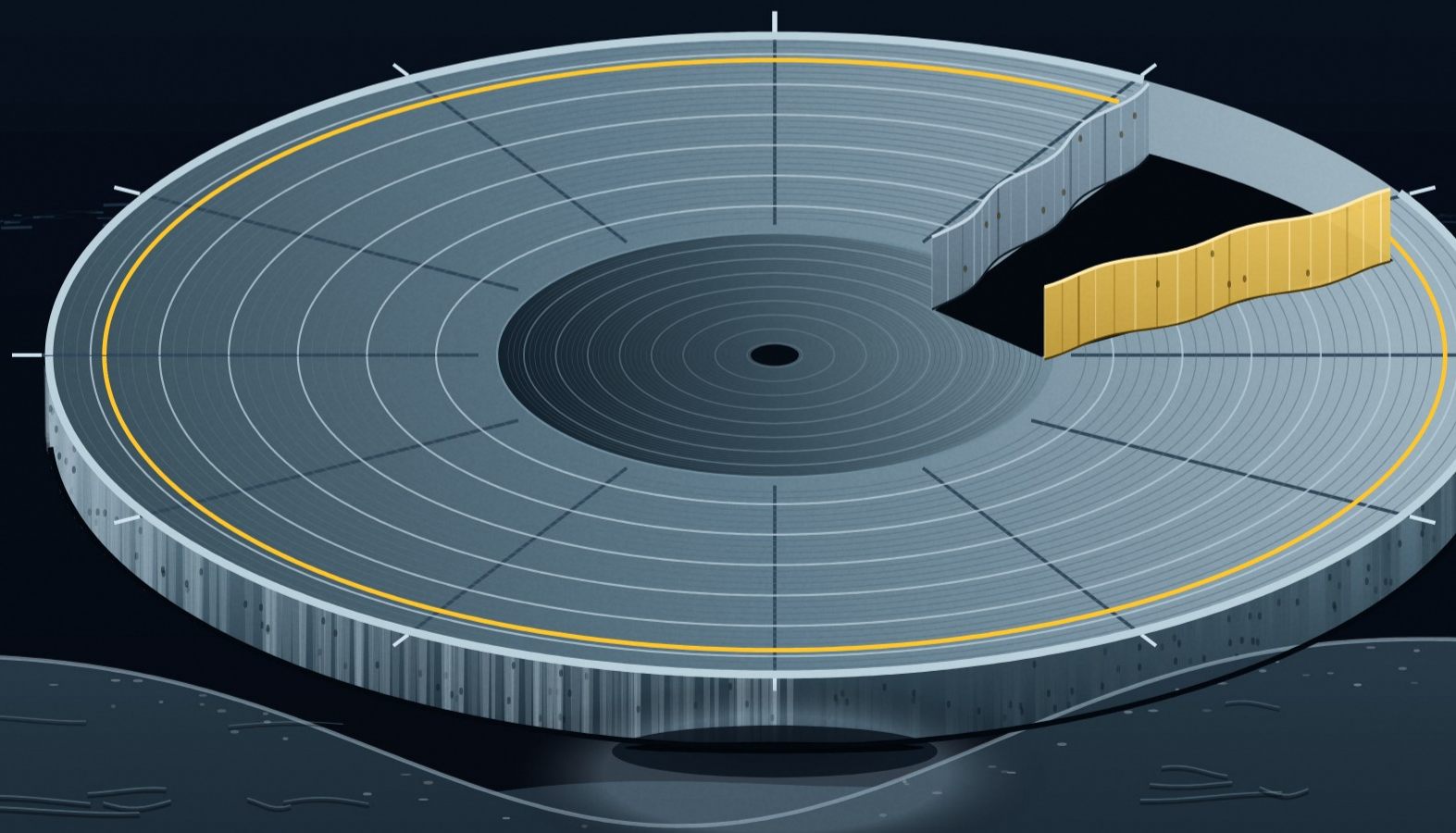


“Everyone is waiting for snow.”

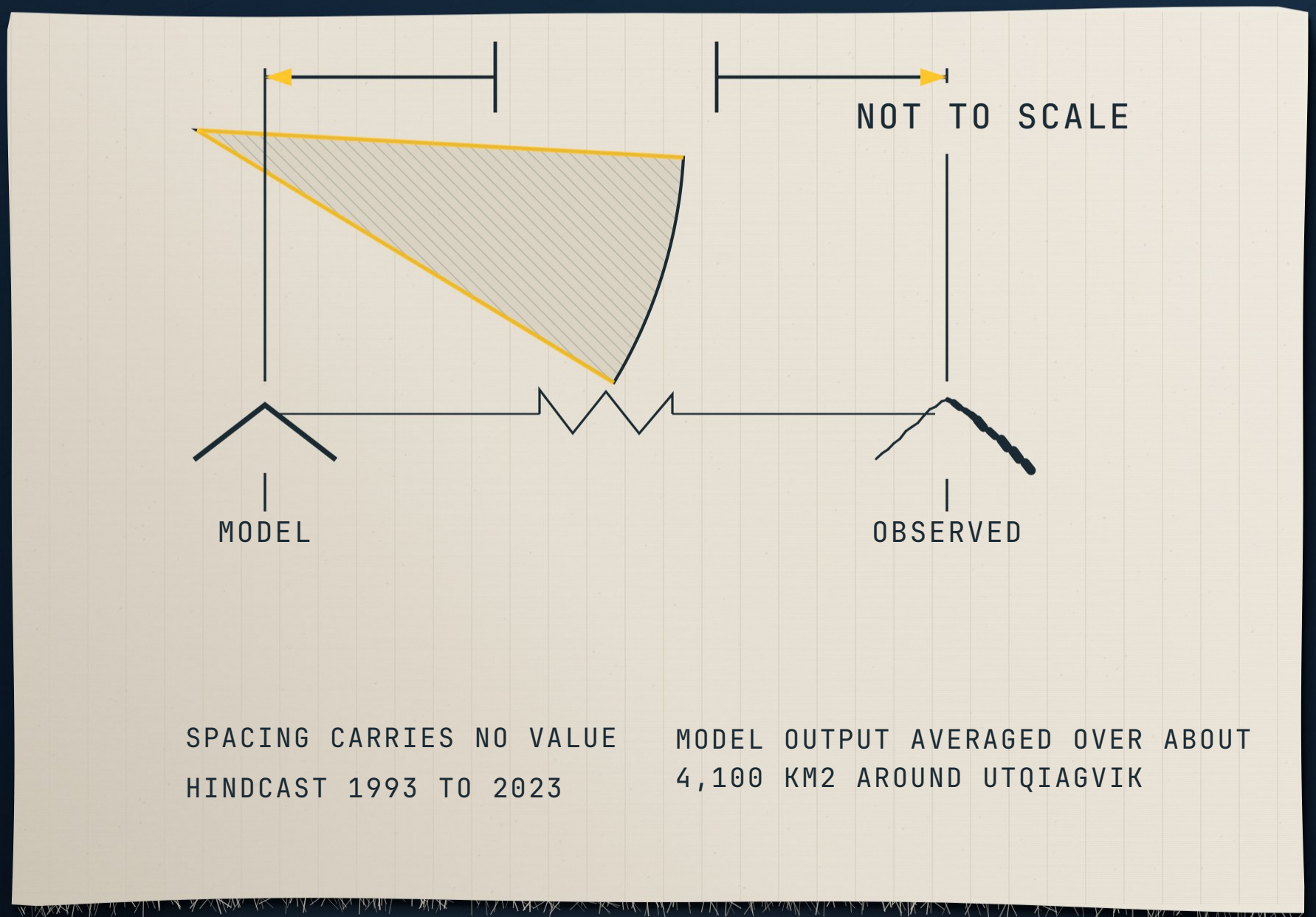
The model had already
frozen the sea.

UTQIAGVIK OBSERVER RECORD, OCTOBER 1ST, 2019



In 2019 the model froze the sea early. The coast froze late.

The paper publishes the direction and no magnitude. This drawing does the same. The two marks sit inside a declared break, so the space between them carries no value.



"It has rained so much that the roads are falling apart and we may have broken a temperature record. Everyone is waiting for snow. The bowhead whales are not close to Barrow yet either."

BILLY ADAMS, AAKH OBSERVER IN UTQIAGVIK
OCTOBER 1ST, 2019

Over 12,000 observations, more than 1,500 km of coast.

Observers document sea ice, ocean conditions, weather, fish and marine wildlife, and unusual or extreme events. The program and the one before it have run since 2006.



ORDER ALONG THE COAST. NOT TO SCALE.

ONE MARK REPRESENTS 100 RECORDS



DISTRIBUTION ALONG THE COAST IS NOT PUBLISHED.
THE PAPER GIVES A TOTAL AND AN EXTENT, NOT A SPREAD.

C05 C06 C07 C08 C29

Observers reported late freeze-up,
warm conditions and stormy weather,

**which made hunting
especially difficult.**

C13

The fall hunt took one whale.

Historical fall harvests have reached up to about 30. Spring is a separate season and is not in this count.

UPPER BOUND OF PAST
FALL HARVESTS, ABOUT 30



WHALES, FALL SEASON

THE SAME INSTRUMENT,
TWELVE DEGREES AWAY

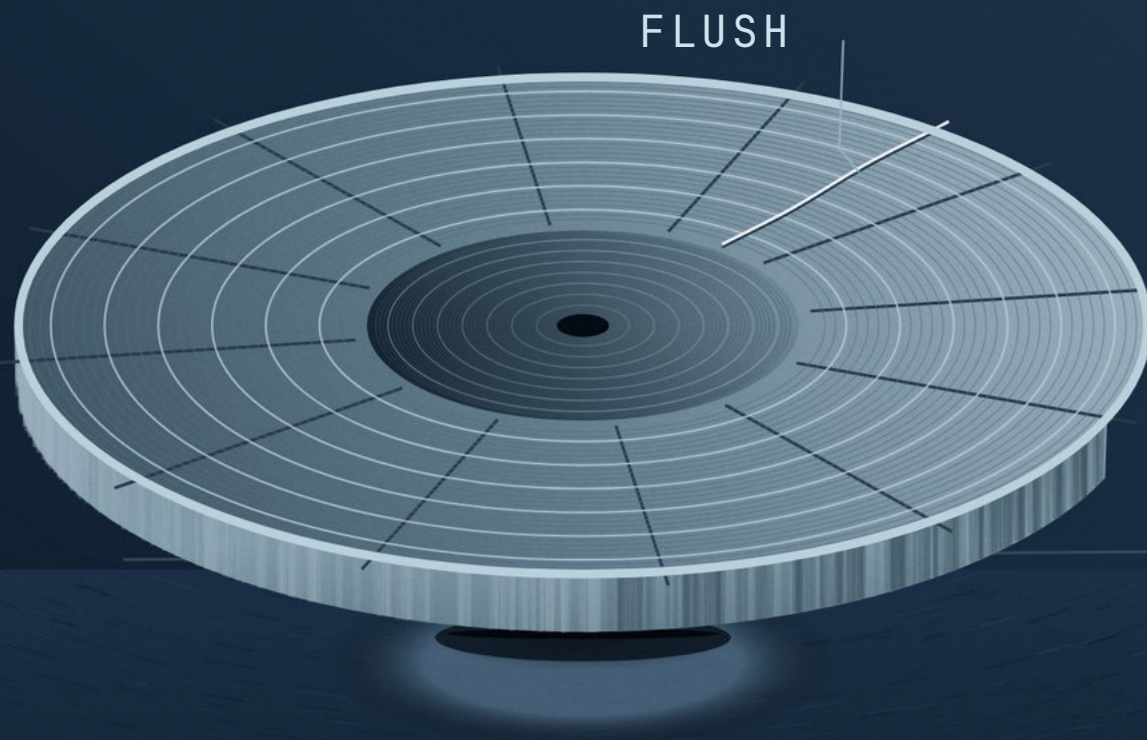
Most of the time the two records agree.

The paper reports the model generally captured the timing of seasonal changes, especially the end of the open water season. That is what makes one wrong season worth finding.

MOM6 COBALT ARC11k COUPLES OCEAN,
SEA ICE AND BIOGEOCHEMISTRY

A PHYSICAL OCEAN MODEL,
NOT A MACHINE LEARNING SYSTEM

NOAA CHANGING ECOSYSTEMS
AND FISHERIES INITIATIVE



C17 C09 C19

alaskaaihq.com

07 / 09

WHO IS ON THE PAPER

Ten authors. The observers are among them.

The paper says Indigenous observers are co-authors and shape its research questions, the interpretation of results and the priorities for model development. It argues Indigenous Knowledge can identify model deficiencies that conventional metrics miss.

"Indigenous Knowledge does not require validation by scientific frameworks."

THE PAPER'S OWN WORDS. C15

PUBLISHED SEPTEMBER 18TH IN
COMMUNICATIONS EARTH AND ENVIRONMENT

LED FROM THE INTERNATIONAL ARCTIC RESEARCH
CENTER, UNIVERSITY OF ALASKA FAIRBANKS

OBSERVER STIPENDS HAVE BECOME
A PROJECT BY PROJECT EFFORT

C01 C03 C04 C14 C15 C16 C23

alaskaaihq.com





A model can be broadly right
and still wrong
about the season you live in.

Which Alaska forecast should be checked
against the people living under it?