

BEAUFORT AND CHUKCHI, YEAR 9

POSITION, FIXED

The permit can find the robot.
It can't count the seal.

STOCK ABUNDANCE
UNDETERMINED



TWO READINGS, ONE DOCUMENT

POSITION BY DISTANCE,
IN THE NOTICE'S WORDS

Sound is how the machine knows where it is.

50 m

Above the ice, a glider gets its position from a satellite modem. Under the ice, that signal can't reach it. The notice says gliders then navigate by trilateration from moored acoustic sound sources, the geometry of intersecting circles.

100 m

GLIDERS TRANSIT TO DEPTHS OF
UP TO 1,000 m

SATELLITE FIXES DO NOT REACH UNDER ICE. THIS PAGE'S GLOSS

THE GRID, AS AUTHORIZED

30 seconds,
every four hours,
all year.

Up to six moorings are fixed
acoustic navigation sources
at 900 to 950 Hz. Each
sends a 30 second pulse
every four hours. Two buoys
drift on that cycle. Levels
this year stay under 185 dB
re 1 uPa at 1 m.

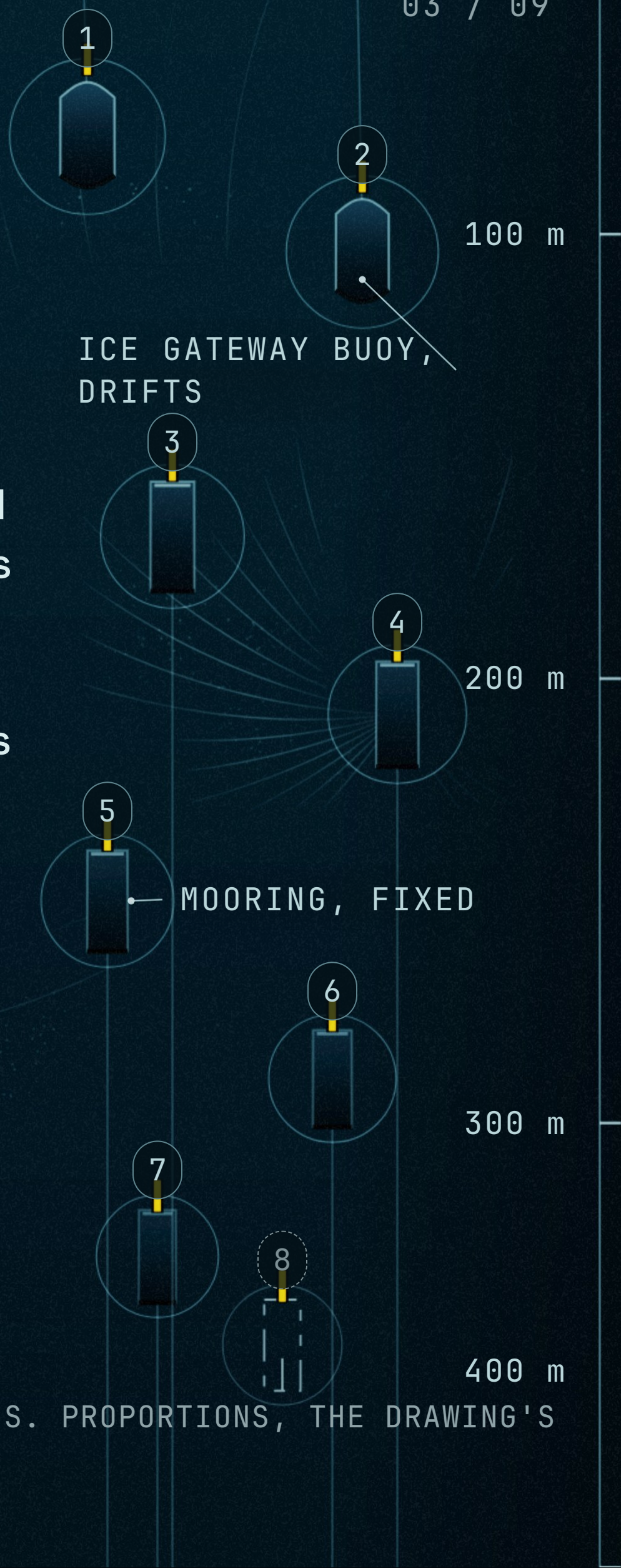
900 TO 950 Hz

30 s EVERY 4 h

NTE 185 dB

re 1 uPa at 1 m

PULSE AND CEILING, THE NOTICE'S. PROPORTIONS, THE DRAWING'S



THE STUDY AREA

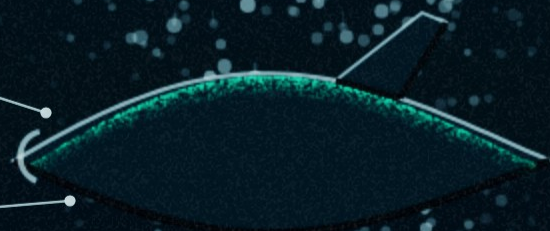
About 639,237
square kilometres
of water.

Its closest point to the Alaska
coast is 204 kilometres, or 110
nautical miles. The work
crosses the US exclusive
economic zone, the high seas
north of Alaska, and part of
Canada's.

THREE JURISDICTIONS,
ONE OF THEM CANADA'S

GLIDER, UP TO 1,000 m

0.25 m/s, ABOUT 23 km/d



500 m

600 m

800 m

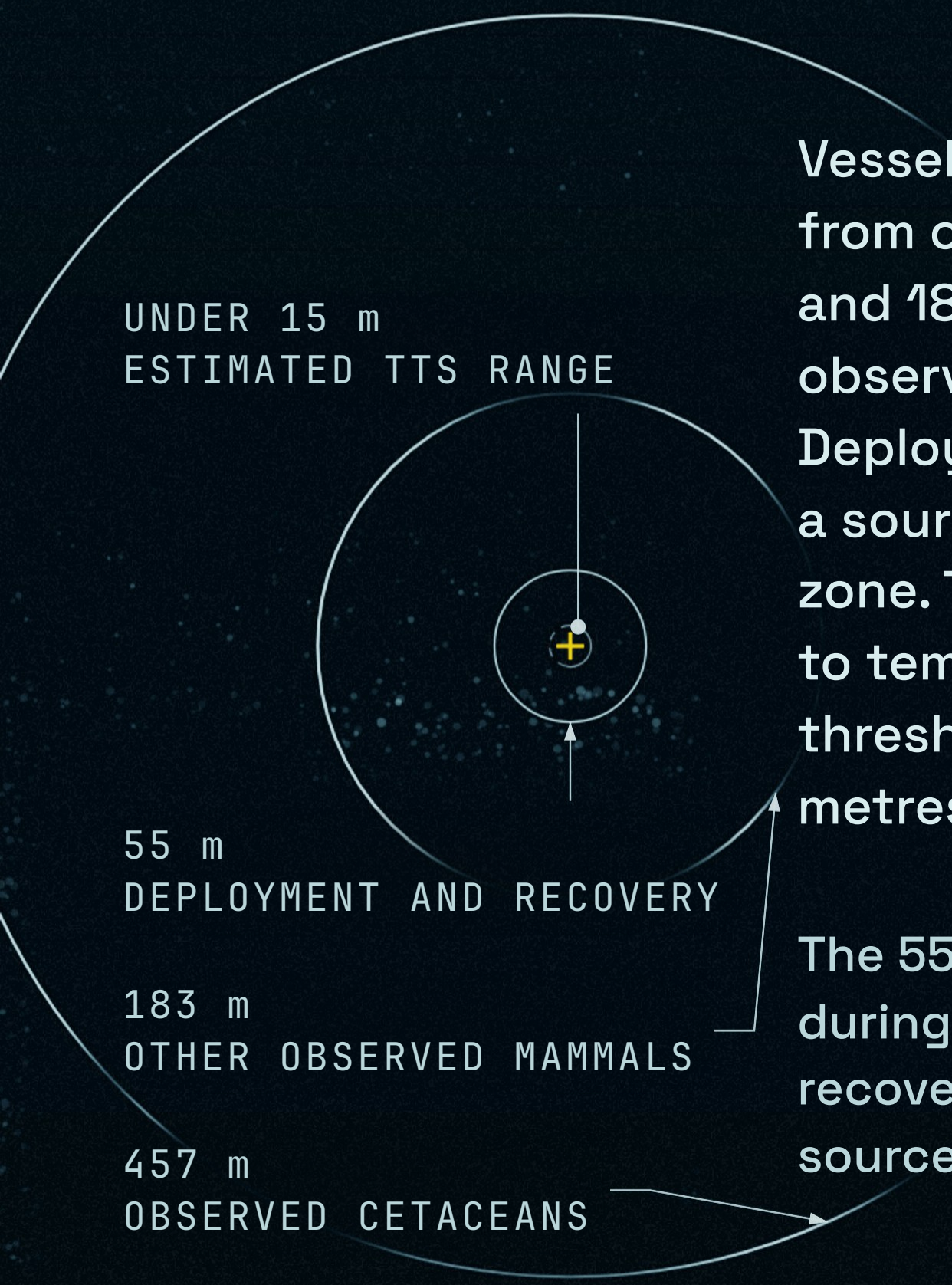
1,000 m

AREA IS THE NOTICE'S. THE MOTE COUNT IS THE DRAWING'S

THE MITIGATION ZONES,
DRAWN TO ONE SCALE

LEVEL A HARASSMENT
NEITHER ANTICIPATED
NOR AUTHORIZED

Every zone here,
drawn at one
scale.



Vessels hold 457 metres from observed cetaceans and 183 metres from other observed marine mammals. Deployment and recovery of a source carries a 55 metre zone. The estimated range to temporary hearing threshold shift is under 15 metres.

The 55 metre zone applies during deployment and recovery, not for the year the source then transmits.

ALL FOUR RADII ARE THE NOTICE'S. THE SCALE IS THIS PAGE'S

THE 22 DAYS ABOARD

WHAT RUNS AFTER
THE SHIP GOES HOME

A 22 day cruise. A full year of transmission.

The cruise is planned for 22 days from September 22nd, on a ship the notice calls ice strengthened rather than icebreaking. The sources keep transmitting until September 13th, 2027. Mitigation that needs an observer works only while one is aboard.

ONE TICK, ONE 30 s PULSE
EVERY FOUR HOURS

THE REST OF THE YEAR

1,000 m

1,500 m

2,000 m

CYCLE AND TERM, THE NOTICE'S. THE TALLY IS THE DRAWING'S

ABUNDANCE ESTIMATES.
NOT TAKE.

The same page gives
the seal's number as **UND**.



BEAUFORT BELUGA
CV 0.229, 1992 SURVEY

Beaufort beluga, 39,258,
from a 1992 survey.
Eastern Chukchi beluga,
13,305, from 2017, at a
coefficient of variation of
0.51. Arctic ringed seal, the
one species here listed as
threatened, undetermined.



EASTERN CHUKCHI BELUGA
CV 0.51, 2017 SURVEY



ARCTIC RINGED SEAL
LISTED THREATENED

PBR, UNDETERMINED

RING RADIUS IS A COEFFICIENT OF VARIATION, NOT A DISTANCE

THE NINTH YEAR,
ONE AT A TIME

Position, fixed. The rest is undetermined.

The authorization runs from September 14th and by statute can't run longer than a year. This is the ninth year of the project. It relies on a Biological Opinion issued on September 13th, 2022. Three private citizens wrote in.

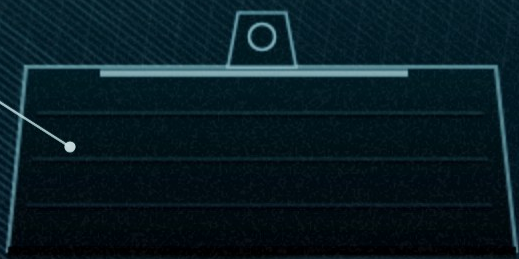
BIOLOGICAL OPINION
SEPTEMBER 13TH, 2022

THREE COMMENT LETTERS
PRIVATE CITIZENS



2,000 m

THE RECORD'S DEEPEST
STATED DEPTH IS 2,000 m.
BELOW THAT, DRAWN
AND NOT MEASURED.



SEABED DEPTH DOES NOT APPEAR IN THE NOTICE



The robot's fix or the seal's number.

Year 10 is already inside the comment
scope of Year 9. Which of those two
numbers should the next authorization
improve?

