



COOK INLET BELUGA • 331 LEFT

Now a machine
can hear them
through the
ship noise.

THE MACHINE

Two gates. One white whale.

NOAA Fisheries, Microsoft AI for Good and Alaska Fish and Game built a deep learning listener in two stages. Stage one flags a sound. Stage two names the species behind it.



THE STAKES

Down almost 80 percent.

Cook Inlet's belugas are a genetically distinct population, cut off from every other Alaska stock. They fell from about 1,300 whales in 1979 to 279 by 2018, and were listed endangered in 2008.



1,300 in 1979 to 279 in 2018

WHY IT IS HARD

A whale in a wall of noise.

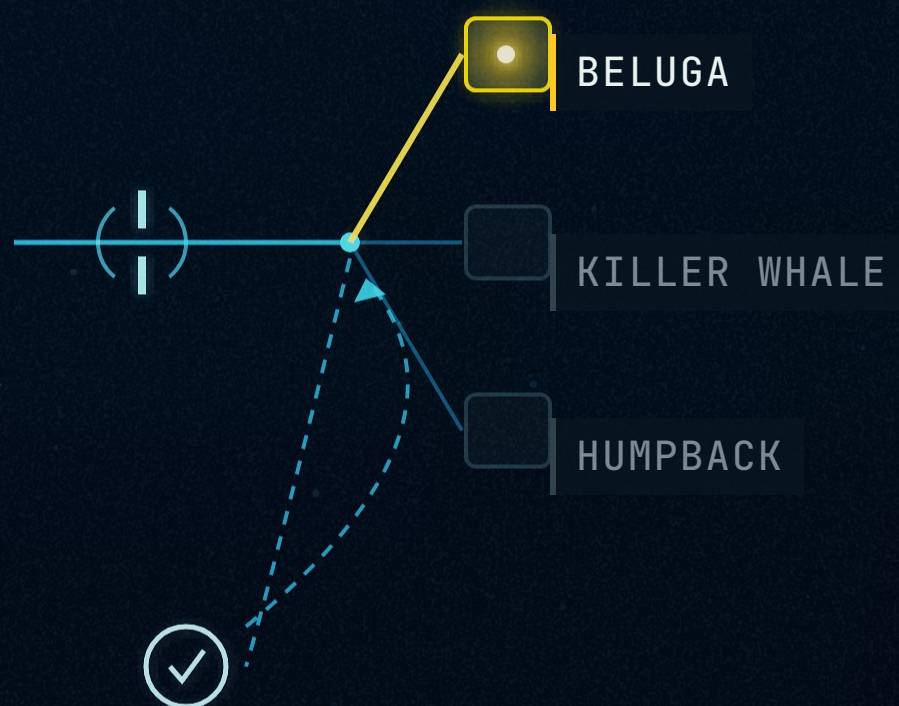
Ocean noise is one of the biggest threats NOAA lists for these belugas. In a crowded inlet a single call can vanish under a passing ship. Hearing them at all is the first problem.



STAGE 1 -> STAGE 2

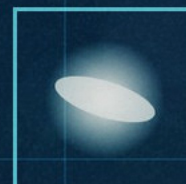
It learns the calls it used to miss.

The model uses contrastive audio language models and active learning. It sorts a sound into beluga, killer whale or humpback, flags the calls it is unsure of for a person to label, and firms up a daily read of where belugas are.



UNSURE -> HUMAN

STAGE 2 / 2



NOAA

USGS

MICROSOFT AI FOR GOOD

NAVAL RESEARCH LAB

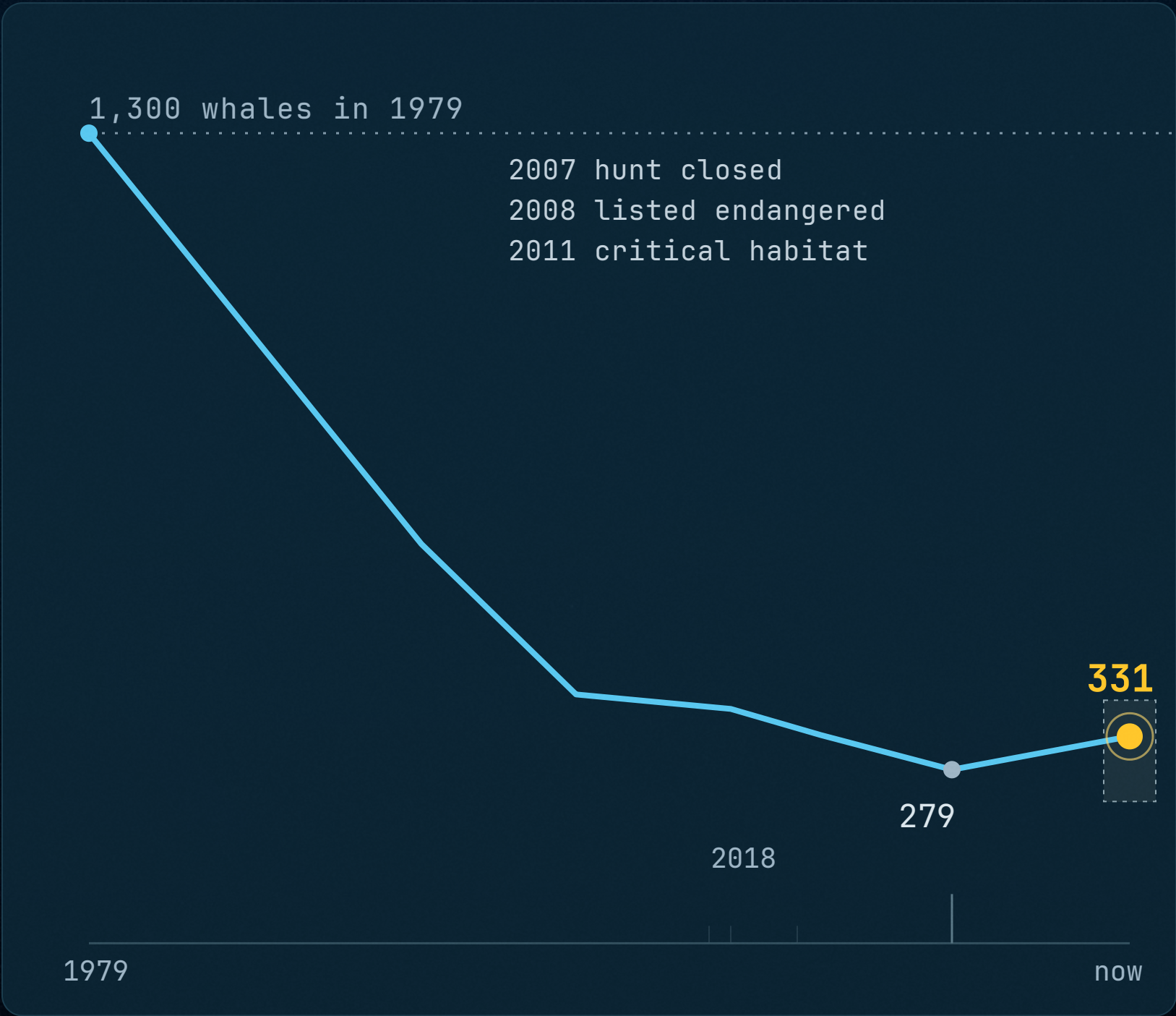
A SECOND SENSE

Ears below. Eyes above.

A separate NOAA led effort, with the U.S. Geological Survey, Microsoft AI for Good and the Naval Research Laboratory, is teaching a cloud model to spot the same whales in satellite images.

THE HONEST NUMBERS

331 today. Still far below 1979.

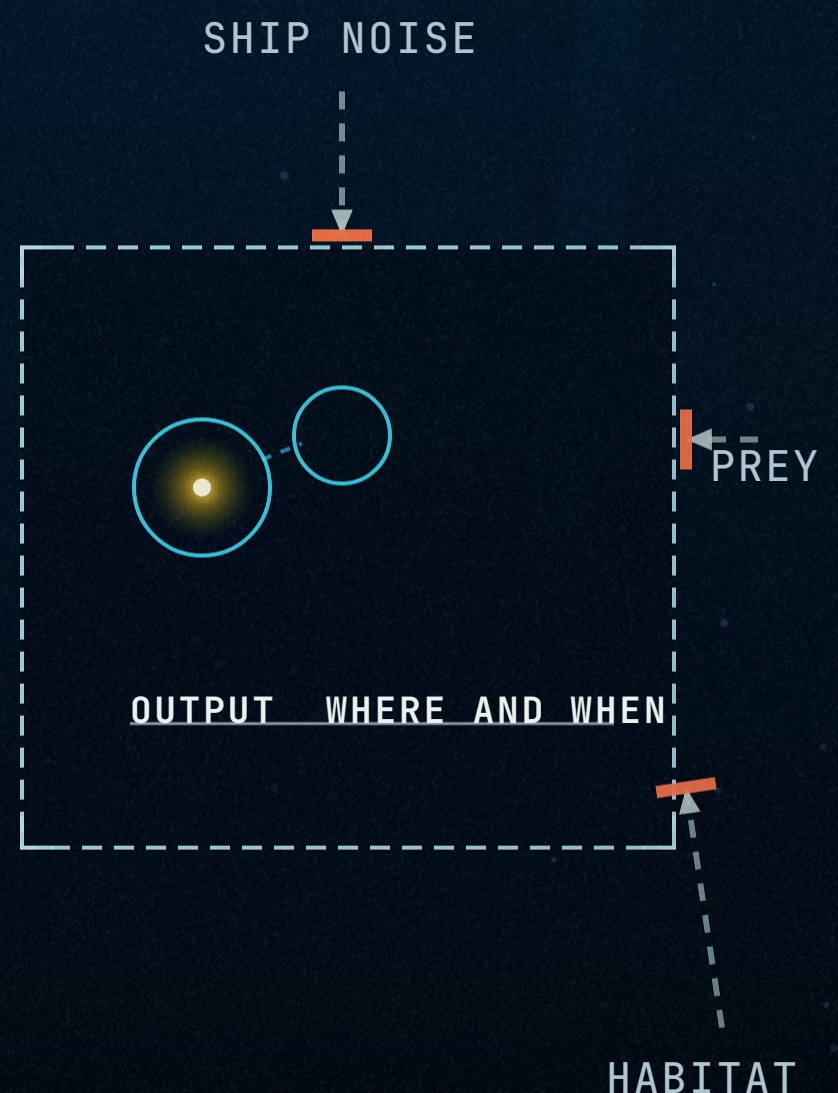


NOAA says **331** may be stabilizing, still about three quarters below the 1,300 of 1979.

THE LIMIT

The machine measures the whale. It cannot move it.

A sharper ear tells managers where and when the belugas are. It does not quiet the ships, refill the prey, or clear the inlet. The hunt has been closed since 2007, and the whales still have not recovered.





A better ear is not a recovery.

AI can finally hear Alaska's most endangered
whale. What would it take to bring it back?