

# Alan Condron

is a Scientific Researcher and a  
Climate Modeller at the

**Woods Hole**

**Oceanographic Institution**

(DON'T!)

**WASTE  
WATER**

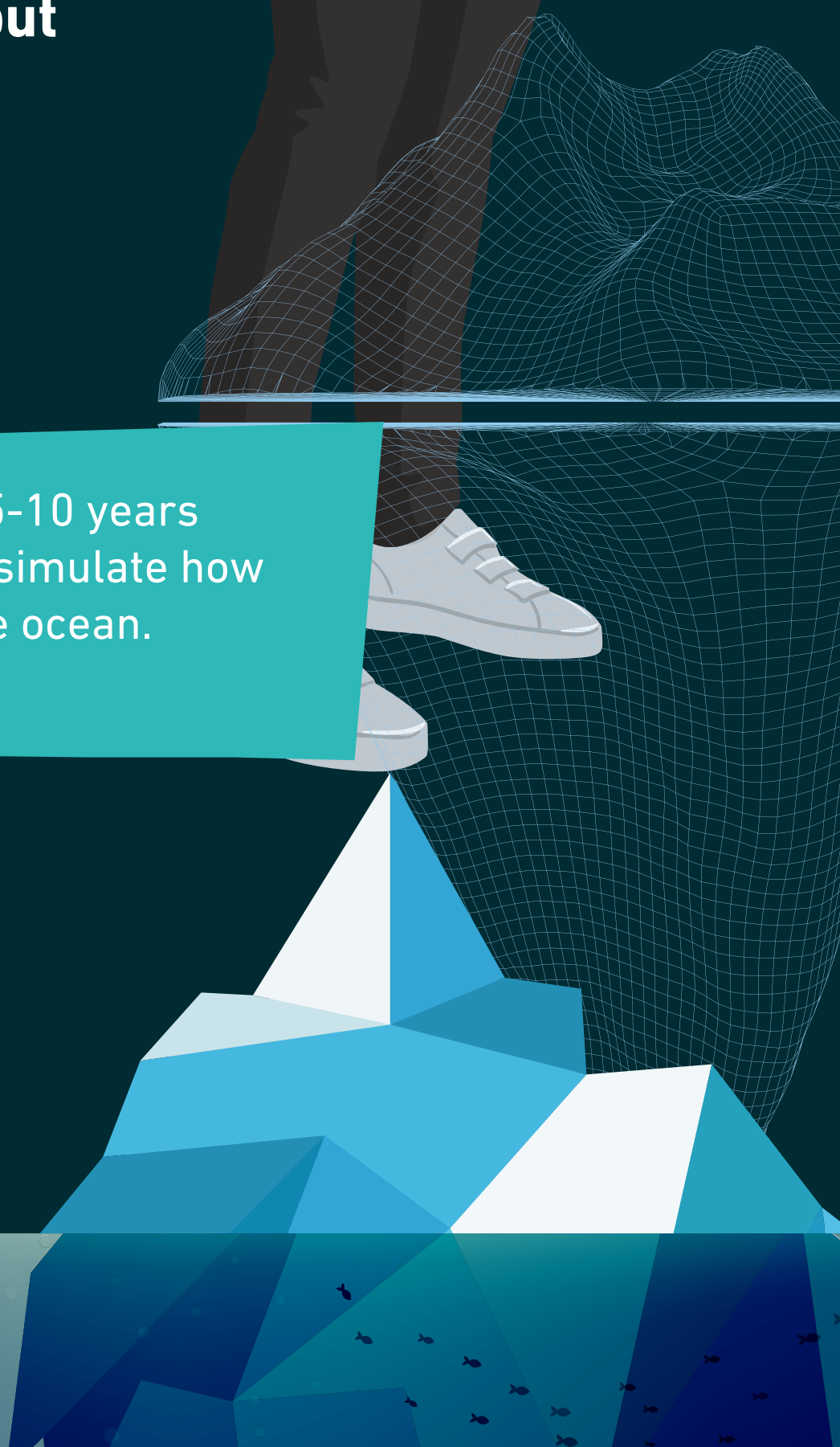
## Icebergs as a source of Drinking Water?

The media seem to periodically put  
out the projects to tow icebergs

Well, it looks like  
I'm guilty here, then.  
(sorry)

But I wanted to  
have scientific input  
here to follow my  
discussion with  
Abdulla Alshehhi  
(see S3E15).

I've spent the last 5-10 years  
writing a model to simulate how  
icebergs drift in the ocean.



There we are! So let's reverse engineer an Iceberg-towing project by using Cape Town as a case study.

(DON'T!)

WASTE  
WATER

Cape Town consumes 500 million liters of water a day. To secure its water adduction, an Iceberg would need to cover 20% of this.

That makes for a huge iceberg:  
600 meters long, 300 meters wide  
and 200 meters deep



=

200 meters  
deep

600 meters  
long

300 meters  
wide

All of that upon arrival,  
as we have to factor in  
what's melting off on  
the way.



(DON'T!)

# WASTE WATER

A tow from Antarctica to Cape Town is about 2'500 km. If you tow it at 1 knot, you'll be there in about 60 days.

Now, there's a specificity about that route: it follows cold currents for a large portion of it, so the Iceberg will be in fairly cold water to start with.



Then, things start to go worse once you get into the warm water in the subtropics, at least in our model.



To compensate, you may consider isolating your Iceberg.



(DON'T!)

# WASTE WATER

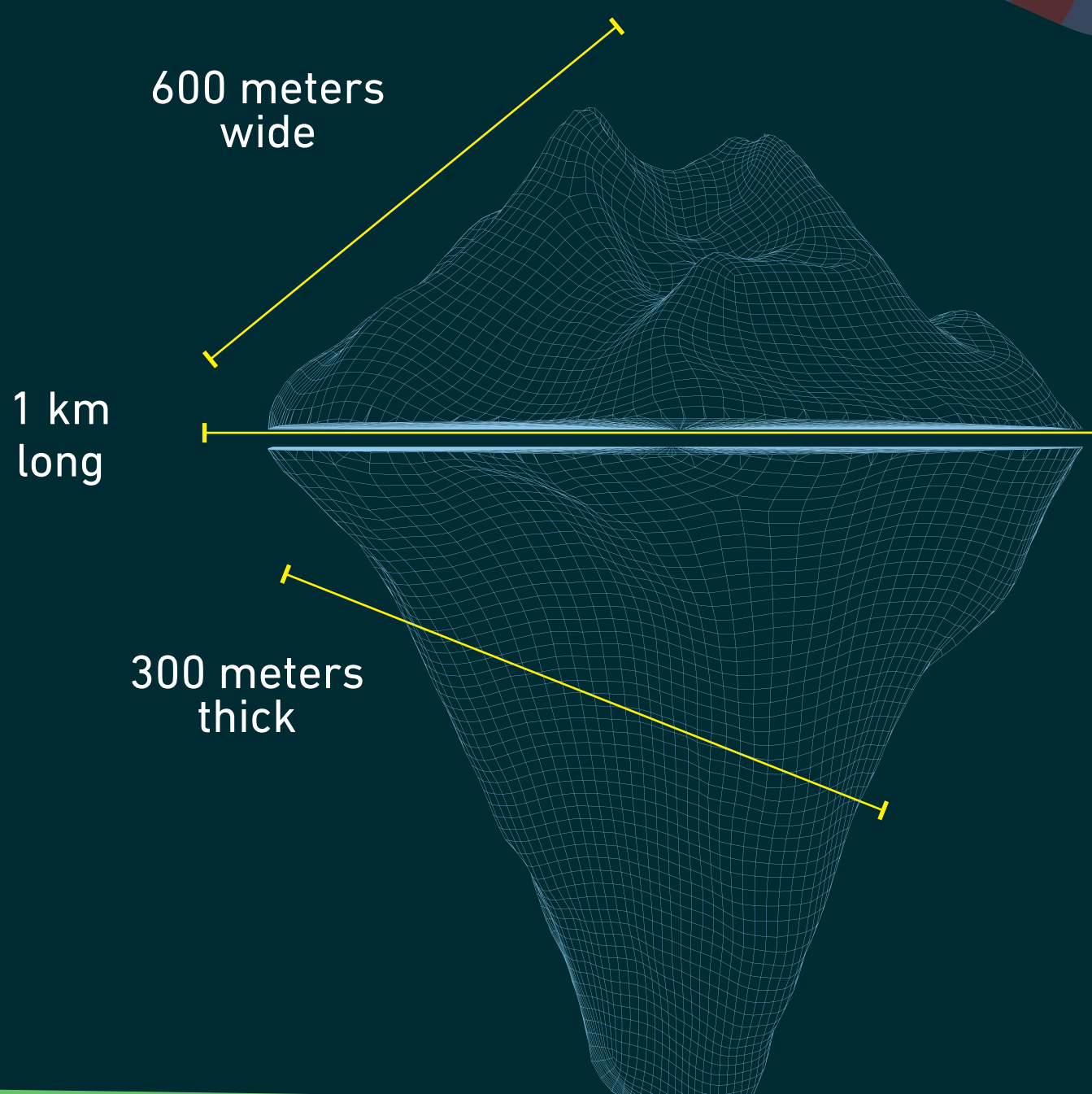
You'd have to focus around the wave line because waves crashing against them is the biggest way that Icebergs deteriorate



Given the surface of one of these icebergs, we would be talking of unrealistically high amounts of material, though.

Hence Alan's model concentrates on unprotected icebergs.

For one of those to survive the foreseen route and have the expected size upon arrival, it would need to be 1 km long, 600m wide, and 300m thick

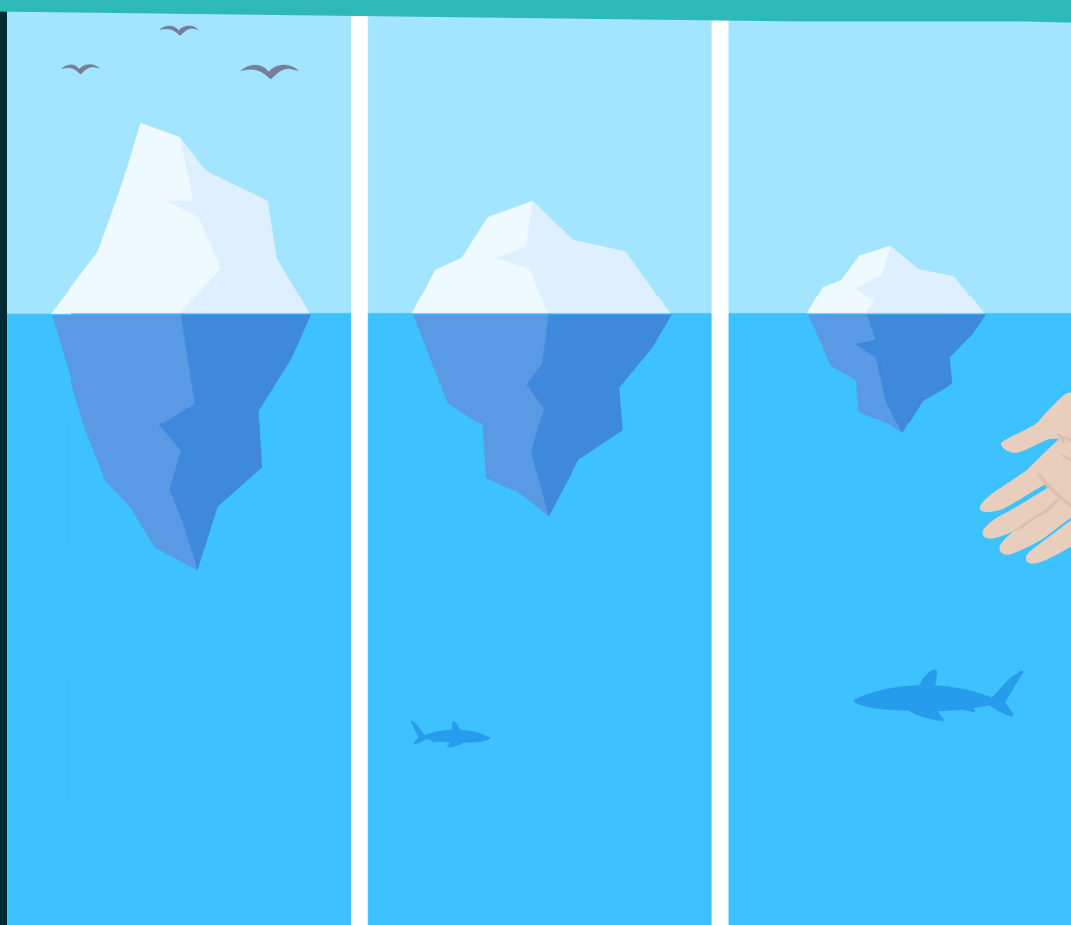


So roughly speaking, the Iceberg shall be five times larger upon capture than upon arrival.

**Nothing impossible; as such Icebergs are quite common in Antarctica. There's still a major caveat, though:**

(DON'T!)  
**WASTE  
WATER**

If you leave it offshore, as subtropical waters surround it, it's gonna be fully melted within two months!



**So you'll have to find a way to harvest that water fast enough.**

**You may have an 'open cast mine' approach or bring the Iceberg into dry docks by maybe cutting it into smaller pieces.**

The water harvesting upon arrival is, in my opinion, one of the main reasons this hasn't been pulled off earlier.



(DON'T!)

# WASTE WATER

... but probably also an infrastructure question that may be sorted with time and experience.

It's easy to focus on negative things and all the things that could go wrong!

Wouldn't it be wiser instead to give it a try and verify how the model translates in the real world?

## We also covered:

- The ecological impacts of an Iceberg tow
- The bigger picture around Day Zero and Water Scarcity in arid places in the world, like Cape Town
- How the ecological impacts of a one-time tow are probably negligible while the consequences of a repeated commercial-scale activity would have to be studied
- How a successful proof of concept would enable verifying theory and possibly build the suited infrastructure to extract the best out of the Iceberg.
- How an Iceberg tow to Dubai is a different game than a southern hemisphere destination
- The financial equation of an Iceberg towing project, the scientific approach that would enable us to learn from the first tow, Nick Sloane's project... and much more!

Don't miss a single bite: head over to [dww.show!](http://dww.show!)

