

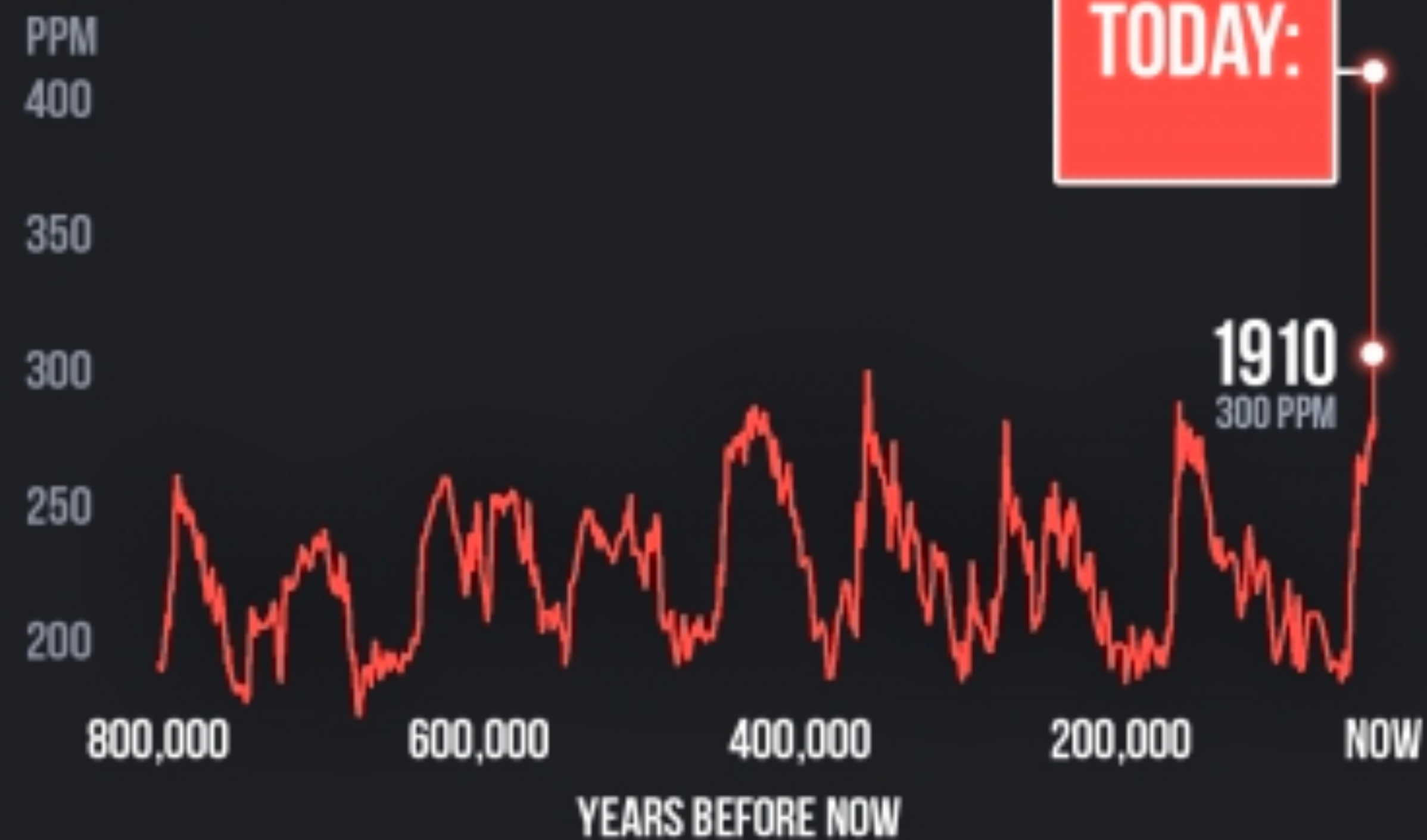
ESIP 2019

LISTENING TO DATA


JUDY TWEDT, UNIVERSITY OF WASHINGTON

CARBON DIOXIDE CLIMB

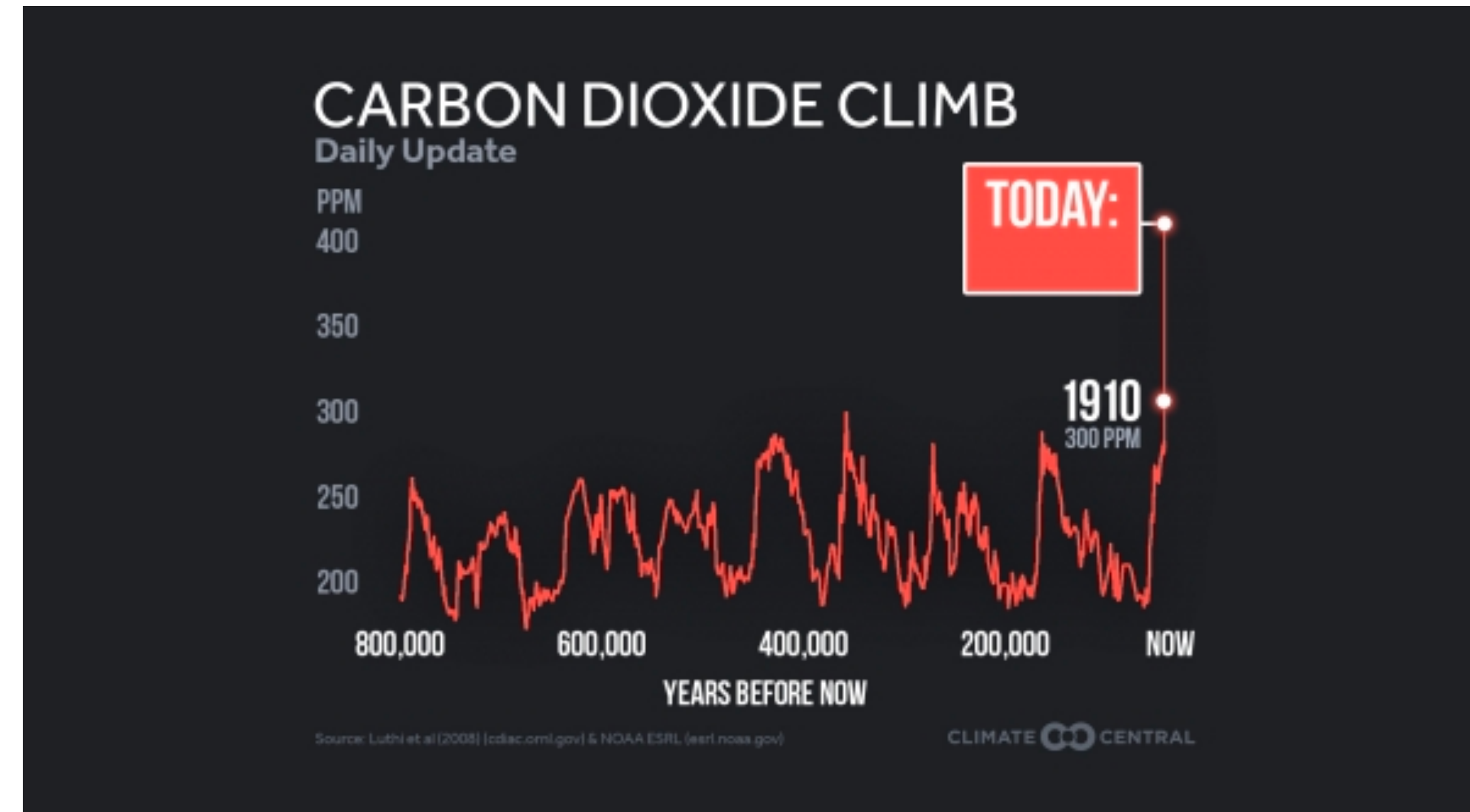
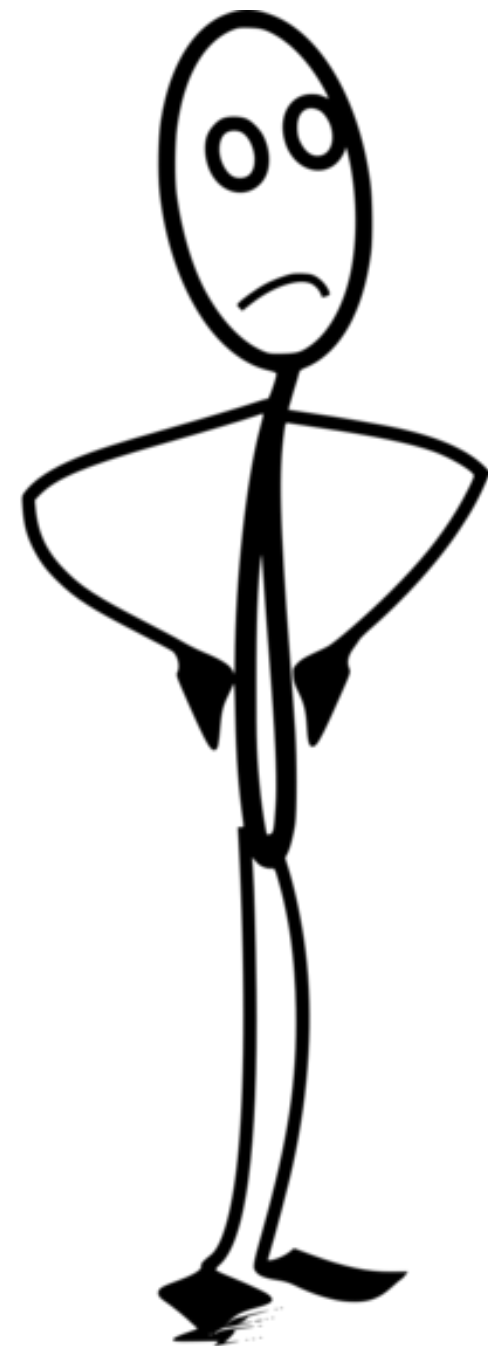
Daily Update



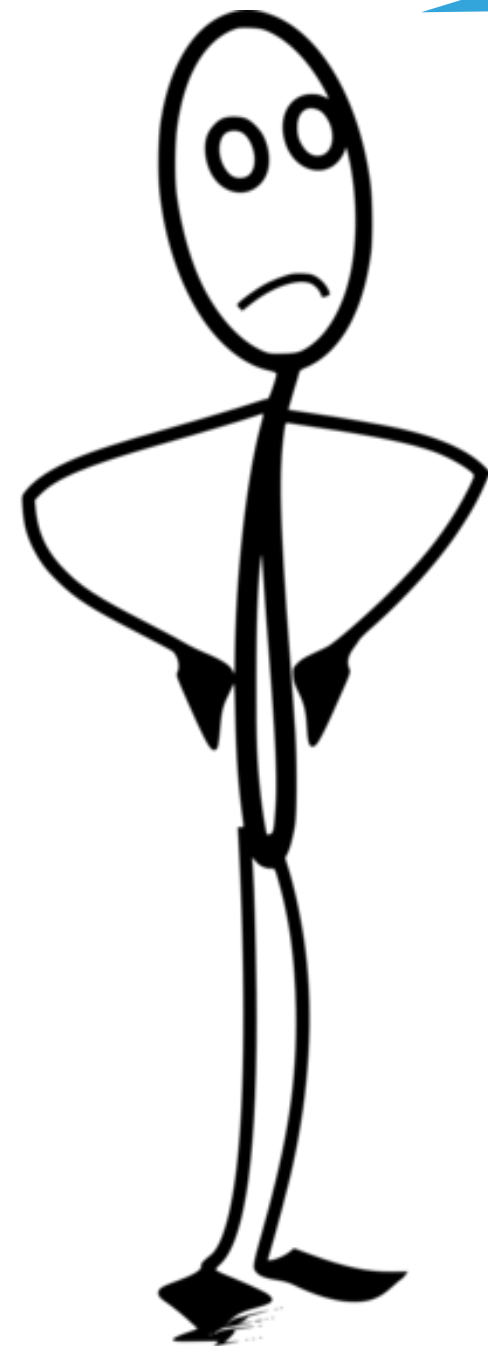
Source: Luthi et al (2008) [cdiac.ornl.gov] & NOAA ESRL (esrl.noaa.gov)

CLIMATE  CENTRAL

WHAT HAPPENS WHEN PEOPLE ENCOUNTER DISTRESSING INFORMATION?



WHAT HAPPENS WHEN PEOPLE ENCOUNTER DISTRESSING INFORMATION?



This is BAD.

I feel powerless.

I don't know what to do.

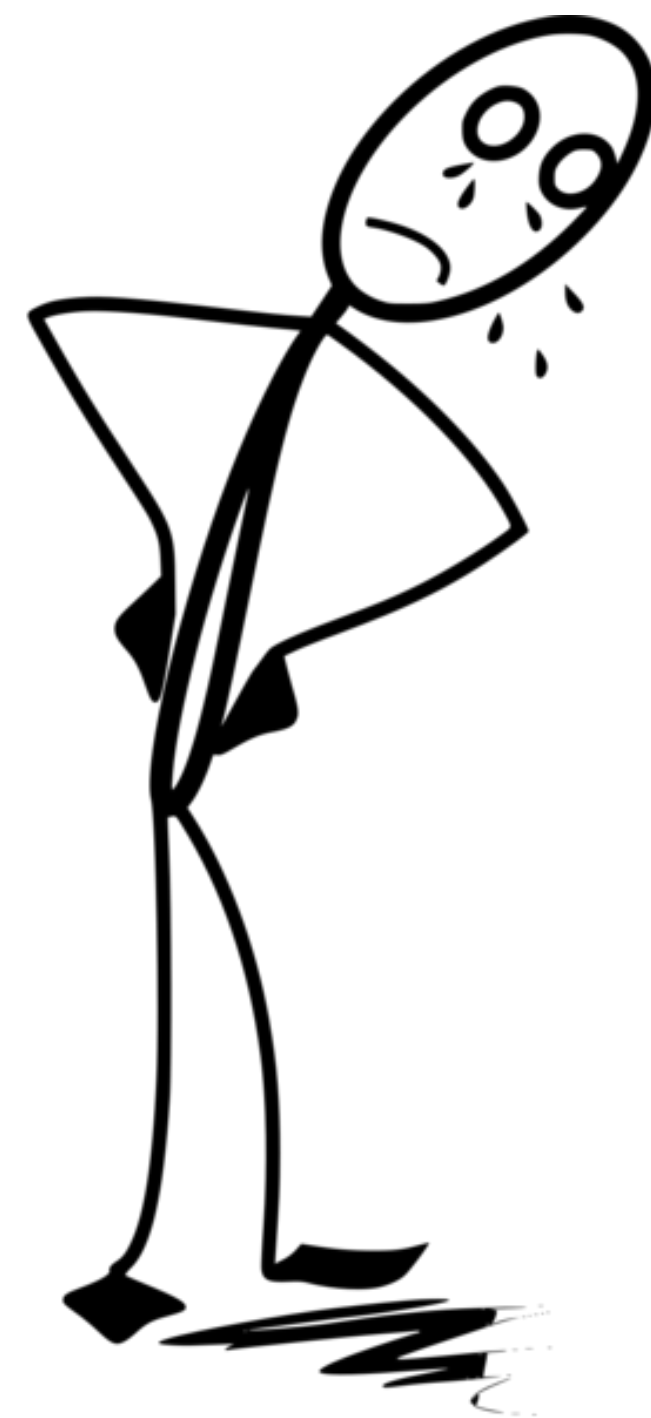
We're DOOMED.

This is scary.

I'm panicking.

It's hopeless.

WHAT HAPPENS WHEN PEOPLE ENCOUNTER DISTRESSING INFORMATION?



This is BAD.

I feel powerless.

I don't want this to happen.

I don't know what to do.

We're doomed.

This is scary.

It's hopeless.



This is too much.
I need to think about something else.

WHAT HAPPENS WHEN PEOPLE ENCOUNTER DISTRESSING INFORMATION?



lunch time

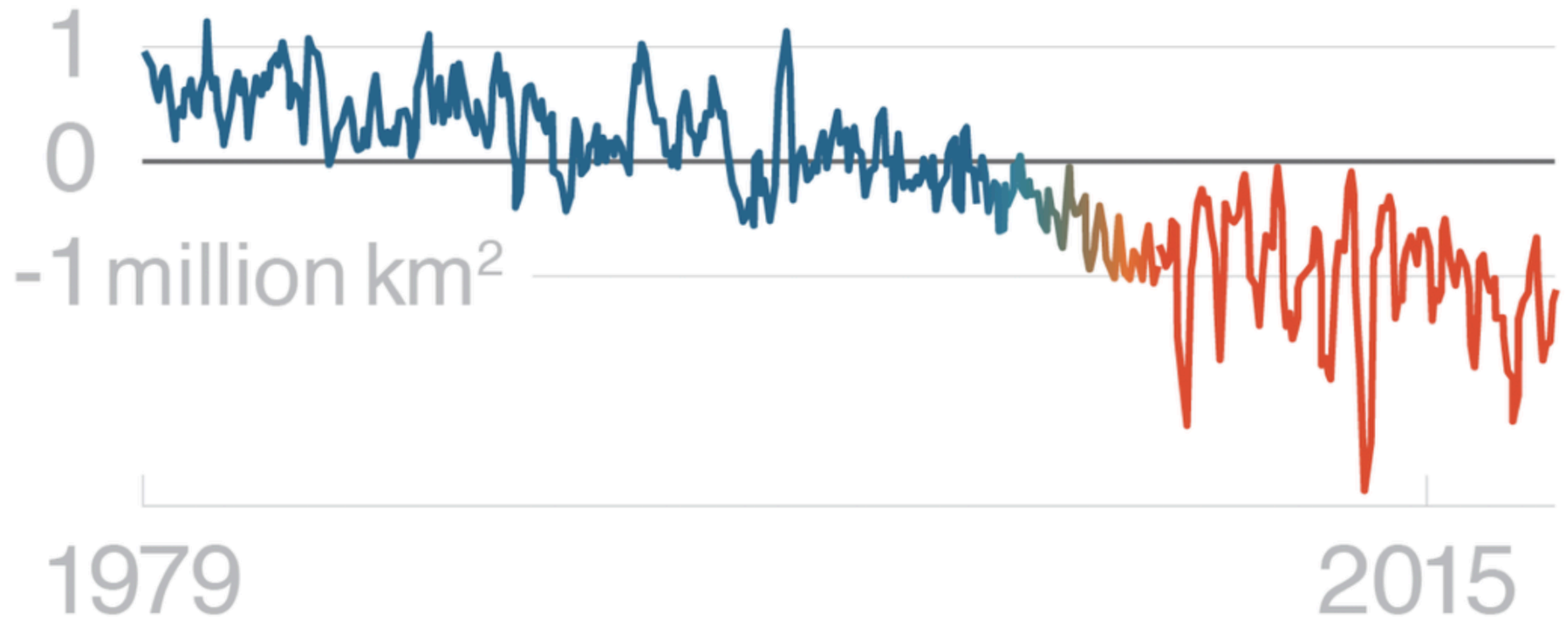
AIDING DATA-INFORMED ACTION

- ▶ 1. Many (but not all) people want or need ways to emotionally process environmental information.
- ▶ 2.



ARCTIC SEA ICE

deviation from long-term average



10



Arctic Sea Ice

a sonic and gestural interpretation of the satellite record from 1979-2016

Judy Twedt

1979

mp
con pdd.

5

9

13

17

21

mf

25

2001

29

2007

33

2012

cresc.

ff

37

dim.

rit.

ppp

senza ped.

<https://tinyurl.com/ArcticSealceForPiano>

WHY EXPRESS DATA-AS-MUSIC?

REPRESENT A TIME-SERIES OVER TIME

CONVEY CLIMATE DATA WITH EMOTION, GESTURE

RELAX THE VISUAL CORTEX, ACTIVATE THE

AUDITORY CORTEX

CREATE A SHARED, VISCERAL EXPERIENCE

MEMORIALIZE THE STORY WHICH THE DATA TELLS

AIDING DATA-INFORMED ACTION

- ▶ 1. Many (but not all) people want or need ways to emotionally process environmental information.
- ▶ 2.

WHAT ARE YOUR ASSOCIATIONS TO ARCTIC SEA ICE LOSS?

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POLAR BEARS, ANIMALS, ECOSYSTEMS

CRYOSPHERE

CLIMATE CHANGE & SEA LEVEL RISE

ARCTIC COMMUNITIES & HUMAN IMPACTS

WHAT ARE YOUR ASSOCIATIONS TO ARCTIC SEA ICE LOSS?

POLAR BEARS, ANIMALS, ECOSYSTEMS

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CLIMATE CHANGE & SEA LEVEL RISE

~~ARCTIC COMMUNITIES & HUMAN IMPACTS~~

< 1% of students surveyed report associations to people and communities

Collaborative work-in-progress:

Inter-weaving place-based Indigenous Knowledge with data sonification



Sound files played at the ESIP conference
will be available in the upcoming release of this project.

Coming in Autumn 2019 at www.arcticstories.org

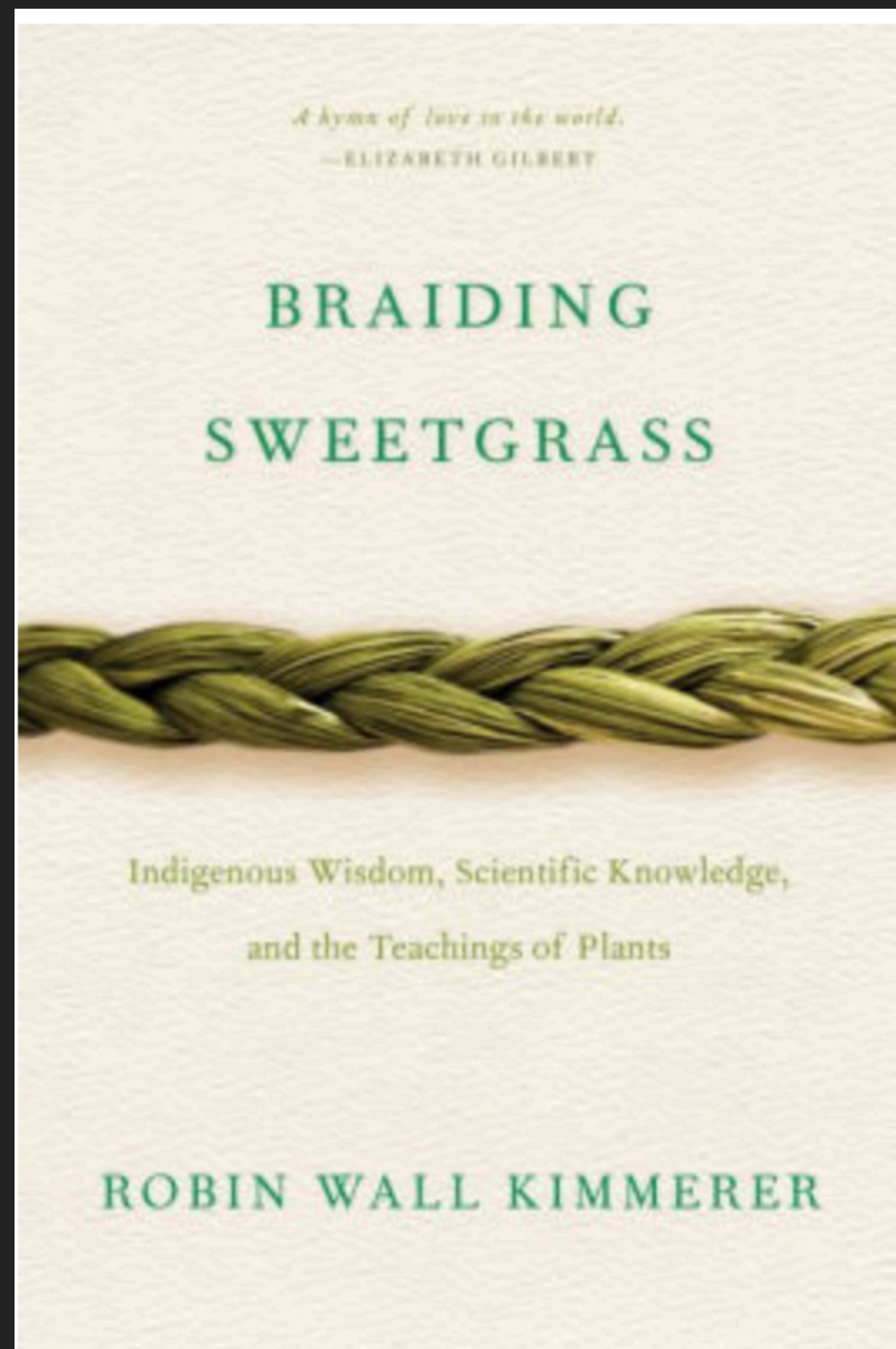
AIDING DATA-INFORMED ACTION

- ▶ 1. Many (but not all) people want or need ways to emotionally process environmental data
- ▶ 2. **Many (but not all) people don't see the connections between environmental data and people.**

Robin Wall Kimmerer,

Professor of Ecology,

SUNY Stonybrook



And a light-hearted way to get people talking about climate data...



Nail data-art by Dr. Tina Angerer

Thank You