



GET READY FOR

# Andy Mann: From Summit to Sea

National Geographic Live Student Presentation Study Guide



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## About Andy Mann

Award-winning filmmaker and photographer Andy Mann combines his passions with purpose as a voice for the world's oceans, following scientists to some of the most extreme locations on the planet in the hope of inspiring change. Mann's journey from rock climber to ocean storyteller involves some remarkable detours and misadventures that prove that field science can be every bit as thrilling as the climbing adventures of his past. He has dived alongside crocodiles, sperm whales, and sharks and survived near misses with icebergs, all in pursuit of his ultimate goal: to shed light on Earth's incredible ocean environments and advocate for their protection.

He now spends over 100 days a year at sea, documenting cutting-edge marine science and telling the story of our rapidly changing planet—covering all seven continents for National Geographic. See Andy Mann: From Summit to Sea live in the Jack Singer Concert Hall with the National Geographic Live series from Arts Commons Presents.

*'Andy's imagery is remarkably memorable, reminding us how the emotion of an image can touch our spirit.'*

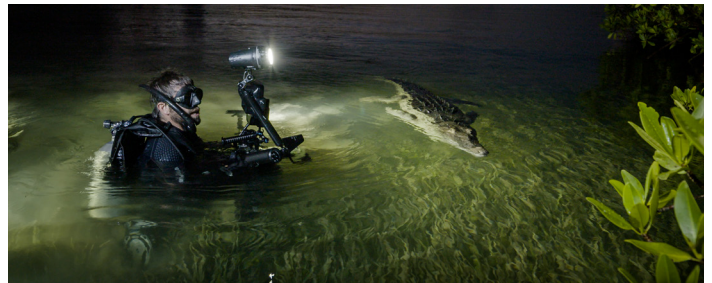
## More about Andy Mann's Work

[Andy Mann \(nationalgeographic.com\)](http://nationalgeographic.com)

[Andy Mann - Oceanographic](#)

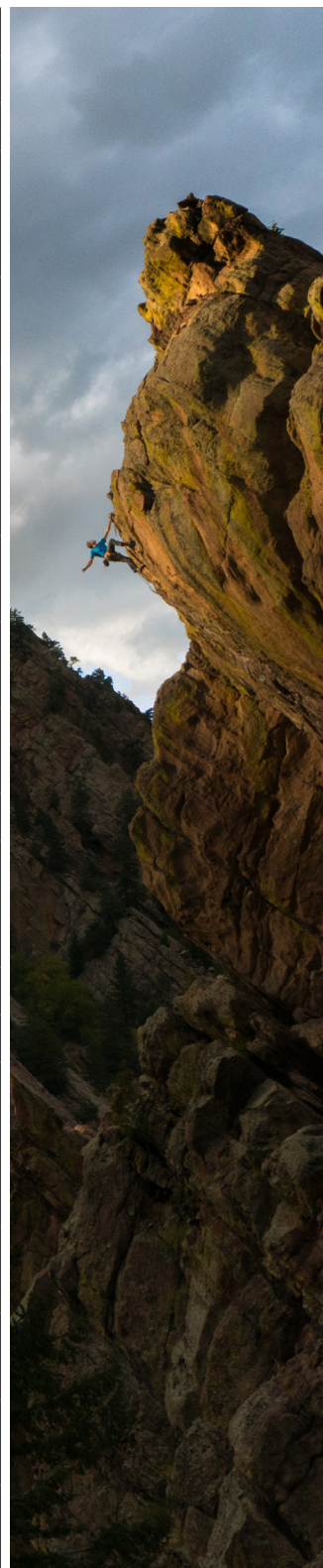
[Diving Into Conservation Photography With National Geographic's Andy Mann — Photographers Without Borders](#)

[Andy Mann Shooting in Greenland \(Youtube video\)](#)



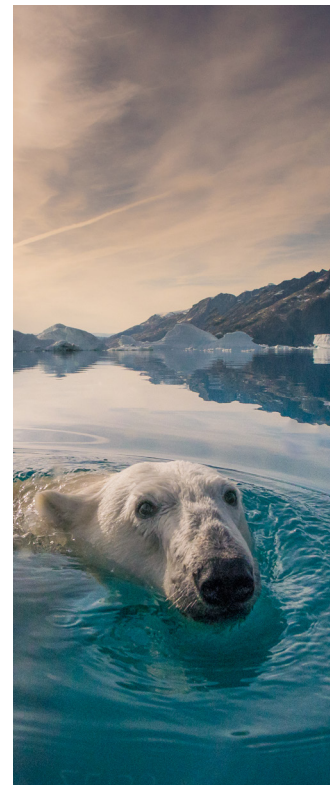
# Summit To Sea Vocabulary

Word	Definition
Acidification	To become more acid.
Accumulate	To gather or collect.
Advocacy	Advocacy is an activity by an individual or group that aims to influence decisions within political, economic, and social institutions
Altitude Sickness	illness caused by reduced oxygen levels at high elevations.
Arid	Dry
Avalanche	Large mass of snow and other material suddenly and quickly tumbling down a mountain.
Biodiversity	All the different kinds of living organisms within a given area.
Biologist	An expert in or student of the branch of science concerning living organisms.
Bioluminescence	Light emitted by living things through chemical reactions in their bodies.
Cartography	Art and science of making maps.
Climate change	Significant and long-lasting change in the Earth's climate and weather patterns.
Coast	The part of the land near the sea; the edge of the land.
Conservation	Prevention of wasteful use of a resource.
Continental shelf	The area of seabed around a large landmass where the sea is relatively shallow compared with the open ocean. The continental shelf is geologically part of the continental crust.
Coral Bleaching	Loss of symbiotic algae (zooxanthellae) in corals, leading to a loss of pigmentation.
Coral Reef	Rocky ocean feature made up of millions of coral skeletons.
Ecosystem	Community and interactions of living and nonliving things in an area.
Exploration	The action of traveling in or through an unfamiliar area in order to learn about it.





Word	Definition
Firn	Grainy ice that forms glaciers. Also called neve.
Glacier	Mass of ice that moves slowly over land.
Gorge	Deep, narrow valley with steep sides, usually smaller than a canyon.
Land	The part of the earth's surface that is not covered by water, as opposed to the sea or the air.
Marine	Having to do with the ocean.
Marine Ecosystem	Community of living and nonliving things in the ocean.
Marine pollution	Any persistent solid material or chemical that is manufactured or processed and directly or indirectly—intentionally or unintentionally — disposed of or abandoned into the marine environment.
Mountain	Landmass that forms as tectonic plates interact with each other.
Nunatak	Mountain peak that is completely surrounded by a glacier.
Ocean	Large body of salt water that covers most of the Earth.
Ocean circulation	Worldwide movement of water (currents) in the ocean.
Ocean Trench	A long, deep depression in the ocean floor.
Oceanographer	Person who studies the ocean.
Organism	An individual animal, plant, or single-celled life form.
Phytoplankton	Microscopic organism that lives in the ocean and can convert light energy to chemical energy through photosynthesis.
Precipitation	All forms in which water falls to Earth from the atmosphere.
Sea	The expanse of salt water that covers most of the earth's surface and surrounds its landmasses.
Seafloor	Surface layer of the bottom of the ocean.
Shallows	An area of the sea, a lake, or a river where the water is not very deep.
Summit	Highest point of a mountain.
Water Cycle	Movement of water between atmosphere, land, and ocean.



## DID YOU KNOW...

### UNESCO International Initiative on Water Quality

#### Water Quality Facts:

- One in nine people worldwide uses drinking water from unimproved and unsafe sources ([source](#))
- 2.4 billion people live without any form of sanitation ([source](#))
- Lack of sanitation is one of the most significant forms of water pollution.
- 90% of sewage in developing countries is discharged untreated directly into water bodies ([source](#))
- Every day 2 million tonnes of sewage and other effluents drain into the world's water ([source](#))
- Industry discharges an estimated 300-400 megatonnes of waste into water bodies every year ([source](#))
- Non-point source pollution from agriculture and urban areas often greatly increases the total pollutant load together with industrial point source pollution
- A reduction of about one-third of the global biodiversity is estimated to be a consequence of the degradation of freshwater ecosystems mainly due to pollution of water resources and aquatic ecosystems ([source](#))
- Re-use of wastewater in agriculture is important for livelihoods, but is associated with serious health risks

#### Alberta Water Facts

<https://albertawater.com/alberta-water-facts/>

- 20% of the world's drinking water is in Canada, but Alberta accounts for only 2.2% of Canada's fresh water [1].
- Alberta is estimated to have more groundwater than surface water. However, only 0.01% of this groundwater is thought to be recoverable [2].
- The mean annual discharge, (the average total volume of water flowing in a river in one year) of the Athabasca River at Fort McMurray is enough to fill sylvan lake (43 km<sup>2</sup>) about 50 times in one year [3].
- Maligne Lake in Jasper National Park is the second largest glacier-fed lake in the world [3].

## DID YOU KNOW...

*Canada is a thriving, well developed country, and yet, according to the Canadian Government, 1 in 9 people in Canada lack access to safe and clean water. Most of these communities are First Nations.*

[\(source\)](#)

## TAKE ACTION!

### 20 Ways Kids Can Help to Save Water

[Water Conservation for Kids | The Water Page](#)

### Social Art for Behaviour Change!

[The Power of Art | One Drop Foundation - YouTube](#)

[The Indigenous Water Allyship | The One Drop Foundation](#)

### Youth using Art to educate and take water action in communities:

[The Indigenous Youth, Art, and Water Initiative - yourcier](#)

## WHAT ACTION WILL YOU TAKE?

Share it with us [@yycARTSed](#)

At Arts Commons, we are participating in a new initiative with [Water First](#).

Water First is Canada's leading charitable organization dedicated to working with Indigenous communities to address local water challenges through education, training, and meaningful collaboration.

Stay Up to Date with Arts Commons Education and watch for an upcoming Change Maker Challenge! Follow us on Instagram [@yycARTSed](#) or sign up for [Arts Commons Education newsletter](#).



### LEARN MORE HERE!

Oceana Canada

<https://oceana.ca/en/resources/resources-for-parents-and-teachers/>

National Geographic Society – Ocean Resources

<https://www.nationalgeographic.org/society/our-focus/ocean/>

Ocean Wise

<https://ocean.org/blog/indigenous-storytelling-sunday-skookum-john/>