

VITAL IMPACTS |



---

# Student Speaker Series



FEATURING

**Kiliii Yuyan**



# Contents

---

Kiliii Yuyan	4
Relevant Concepts and Standards	5
Background Information	6
Activities	13

All website references in this document are consolidated at  
<https://bit.ly/amivitalemedia>



# Kiliii Yuyan



Known for his joyful grin, photographer Kiliii Yuyan has reasons to be thankful. He's survived a hunting polar bear and charmed sea snakes. He's found community at the edges of the world. But perhaps it is easiest to say that Kiliii is a storyteller who seeks to understand the world from many human perspectives.

From his Chinese and Nanai/Hézhè (East Asian Indigenous) ancestry, Kiliii was driven to be curious about the natural world. For two decades he built and paddled traditional kayaks, exploring his grandmother's culture through the craft of his ancestors. Today, he is a photographer committed to telling stories that help humanity understand itself and its relationship to mother earth.

Visit Kiliii's [website](https://www.kiliii.com) to learn more about him and see some of his amazing photographs.

<https://www.kiliii.com/ABOUT>

Links to all background materials can be found on the reference page at <https://bit.ly/amivitalemedia>

# Relevant Concepts and Standards



## Science concepts related to Kiliii's content area include:

- Biodiversity, ecosystems, climate change, natural resources, food webs, Indigenous cultures, fisheries, human environmental impact

## Educational standards that may be supported by Kiliii's content include:

- **5-ESS3-1** - Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
- **MS-LS2-1** - Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- **MS-LS2-4** - Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- **MS-ESS3-3** - Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment
- **MS-ESS3-4** - Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

# Background Information

## Articles

### **Kiliii Yüyan: Illuminating the Human Relationship to the Natural World**

Learn more about Kiliii and his work immortalizing Indigenous practices in order to remind us to stay interested in the land and natural world that we are also a part of.

Hutchinson, Natalie. "Kiliii Yüyan: Illuminating the human relationship to the natural world." *National Geographic Magazine*, National Geographic Society, 9 Jun 2022,

<https://www.nationalgeographic.com/impact/article/kiliii-yuyan-explorer-story>. Accessed 1 Sept. 2024.

### **From A Traditional Kayak Builder To National Geographic Photographer, Kiliii Yüyan Takes Indigenous Narratives to a Global Scale**

In this interview, Kiliii shares how he got into photojournalism and his perspective highlighting stories on the human relationship to nature as a visual storyteller.

Werk, Jarrett. "From A Traditional Kayak Builder To National Geographic Photographer, Kiliii Yüyan Takes Indigenous Narratives to a Global Scale." *Medium*, 27 Apr. 2022.

<https://medium.com/the-reynolds-media-lab/from-a-traditional-kayak-builder-to-national-geographic-photographer-kiliii-y%C3%BCyan-takes-indigenous-f854fb34c991>. Accessed 1 Sept. 2024.

### **Meet the Bowhead Whale Hunters of Northern Alaska**

Kiliii joins local Inupiat hunters on the ice as they use traditional whaling practices to hunt for bowhead whales.

Note: This article requires a National Geographic subscription which may be accessible via certain schools and organizations.

Stone, Daniel. "Meet the bowhead whale hunters of northern Alaska." *National Geographic Magazine*, National Geographic Society, Dec 2018.

<https://www.nationalgeographic.com/magazine/article/proof-whale-hunters-northern-alaska>. Accessed 1 Sept. 2024.

### **'There's Good Fire and Bad Fire.' An Indigenous Practice May be Key to Preventing Wildfires**

For thousands of years, indigenous communities have managed forests using controlled burns. With climate change driving an increase in wildfires, perhaps looking to these communities for management solutions can help fight fire with fire.

Mann, Charles C. "'There's good fire and bad fire.' An Indigenous practice may be key to preventing wildfires." *National Geographic Magazine*, National Geographic Society, 17 Dec. 2020.

<https://www.nationalgeographic.com/history/article/good-fire-bad-fire-indigenous-practice-may-key-preventing-wildfires>. Accessed 1 Sept. 2024.

Links to all background materials can be found on the reference page at <https://bit.ly/amivitalemedia>

## Background Information

### **North America's Native Nations Reassert Their Sovereignty: 'We are Here'**

Indigenous peoples from across the continent are reclaiming their land, crops, and traditional practices. Learn how these unique communities are envisioning a more collaborative world that supports restoration of the land using the long-standing values of many Native societies.

Note: This article requires a National Geographic subscription which may be accessible via certain schools and organizations.

Mann, Charles C. "North America's Native nations reassert their sovereignty: 'We are here.'" *National Geographic Magazine*, National Geographic Society, 14 Jun. 2022.

<https://www.nationalgeographic.com/magazine/article/north-americas-native-nations-reassert-their-sovereignty-feature>. Accessed 1 Sept. 2024.

### **What Inughuit Hunters can Teach us About the Revered Narwhal**

To Inughuit, the narwhal hunt is an integral part of their culture and livelihood. Learn how this community relies on the narwhal and how their knowledge shapes this animal's conservation, management, and scientific understanding.

Note: This article requires a National Geographic subscription which may be accessible via certain schools and organizations.

Raygorodetsky, Gleb. "What Inughuit hunters can teach us about the revered narwhal." *National Geographic Magazine*, National Geographic Society, 28 Jun. 2024.

<https://www.nationalgeographic.com/environment/article/greenland-inughuit-hunters-narwhals>. Accessed 1 Sept. 2024.



Links to all background materials can be found on the reference page at <https://bit.ly/amivitalemedia>



## Background Information

### Films and Video

#### **Chronicling a Traditional Whale Hunt in Northern Alaska**

Kiliii speaks about his time visiting northern Alaska and becoming immersed in the Indigenous whaling practices there.

*Run time: ~16 minutes*

"Chronicling a traditional whale hunt in northern Alaska." *YouTube*, uploaded by National Geographic Society, 7 May 2019, <https://www.youtube.com/watch?v=Z-pYFbZ2zQo>. Accessed 1 Sept. 2024.

#### **GO THERE™ - Kiliii Yuyan**

Meet Kiliii and learn how he uses storytelling to explore our innate human connection with the natural world.

*Run time: 3 minutes*

"GO THERE™ Vol. IV — Kiliii Yuyan." *YouTube*, uploaded by Danner Boots, 25 Sept. 2021, [https://www.youtube.com/watch?v=vk\\_zdCSUt4M](https://www.youtube.com/watch?v=vk_zdCSUt4M). Accessed 1 Sept. 2024.

#### **A Lens on the World with Kiliii Yuyan**

Journey to the Pacific Northwest with Kiliii as he documents the declining Southern Resident Killer Whale population and learn more about what draws him to photography as a means of telling stories.

*Run time: ~11 minutes*

"WaterBear & Nikon present: A Lens on the World with Kiliii Yuyan." *YouTube*, uploaded by Nikon Europe, 31 Jan. 2022, <https://www.youtube.com/watch?v=1L24pgwUsN0>. Accessed 1 Sept. 2024.

#### **The Season of Twilight**

Travel with Kiliii to western Canada as he meets with Indigenous peoples and learns more about their unique cultures as the days turn shorter and nights turn longer in the winter season.

*Run time: 6 minutes*

"The Season of Twilight | National Geographic." *YouTube*, uploaded by National Geographic, 5 Jun. 2024, [https://www.youtube.com/watch?v=\\_pWHz-StfmE](https://www.youtube.com/watch?v=_pWHz-StfmE). Accessed 1 Sept. 2024.

Links to all films and videos can be found on the reference page at <https://bit.ly/amivitalemedia>. We recommend opening these links to follow along.

## Background Information

### Websites

#### Native Knowledge 360°

Native Knowledge 360° by the Smithsonian National Museum of the American Indian provides educators and students with new perspectives on Native American history and culture. Explore a variety of resources that incorporate Native narratives and more comprehensive histories to inform teaching and learning about Native America. These materials challenge assumptions and offer a holistic view of the past while also highlighting the vibrancy of Native peoples and cultures today.

"Native Knowledge 360° | Smithsonian National Museum of the American Indian." *National Museum of the American Indian*, Smithsonian Institution, <https://americanindian.si.edu/nk360>. Accessed 1 Sept. 2024.

#### Smithsonian Learning Lab: Smithsonian Arctic Studies Center in Alaska

The Smithsonian Institution's Arctic Studies Center works with Alaska Natives on collaborative research and educational programs. This Learning Lab collection is a resource to explore Alaska Native cultures, museum objects, community videos, and classroom lessons. Learn from elders, culture-bearers, scholars, and artists.

"Smithsonian Arctic Studies Center in Alaska." *Smithsonian Learning Lab*, Smithsonian Institution, <https://learninglab.si.edu/org/sasc-ak>. Accessed 1 Sept. 2024.

#### CLEAN Resources

Visit CLEAN, the Climate Literacy and Energy Awareness Network, for a vast collection of vetted teaching resources on climate and energy for K-12 and beyond.

"CLEAN: Committed to Climate and Energy Education." *CLEAN*, 27 Nov. 2023, <https://cleanet.org/index.html>. Accessed 1 Sept. 2024.

#### NOAA in the Arctic

Learn about the research the National Oceanic and Atmospheric Administration (NOAA) is doing in the Arctic as well as exploring their Arctic report card and accessing authentic data and data visualization tools.

"NOAA in the Arctic." *National Oceanic and Atmospheric Administration*, <https://arctic.noaa.gov/>. Accessed 1 Sept. 2024.

#### Exploring by the Seat of Your Pants

Bringing those on the frontlines of science, exploration, conservation, and adventure live into classrooms through virtual guest speakers and field trips.

"Home - Exploring by the Seat of Your Pants." Exploring by the Seat of Your Pants, 2023, <https://www.exploringbytheseat.com>. Accessed 25 Oct. 2023.

Links to all websites can be found on the reference page at <https://bit.ly/amivitalemedia>

## Background Information

Videos relevant to Kili'i's work include: *Indigenous Fisheries and Two Eyed Seeing* (<https://www.youtube.com/watch?v=tyzsFyTZkY>), *Indigenous and Local Knowledge of Fishers in Fiji* (<https://www.youtube.com/watch?v=6BPlC2PIDGs>), and *Indigenous Fisheries Science* (<https://www.youtube.com/watch?v=29tS2ORJZ1w>).

"Kate Mussett | Indigenous Fisheries and Two Eyed Seeing." *YouTube*, uploaded by Exploring by the Seat of Your Pants, 7 Jun. 2022, <https://www.youtube.com/watch?v=tyzsFyTZkY>. Accessed 1 Sept. 2024.

"Salanieta Kitolelei | Indigenous and Local Knowledge of Fishers in Fiji." *YouTube*, uploaded by Exploring by the Seat of Your Pants, 21 Jun. 2023, <https://www.youtube.com/watch?v=6BPlC2PIDGs>. Accessed 1 Sept. 2024.

"Andrea Jane Reid | Indigenous Fisheries Science." *YouTube*, uploaded by Exploring by the Seat of Your Pants, 9 Jun. 2021, <https://www.youtube.com/watch?v=29tS2ORJZ1w>. Accessed 1 Sept. 2024.

#### Conservation Nation Academy (<https://conservationnation.org/educators-join-the-conservation-nation-academy/>)

All students should have an equal chance to see themselves—rightfully and confidently—as conservation and wildlife champions. To motivate and support the next generation of conservation leaders, our education programs provide unique resources, hands-on leadership opportunities for teens, grants to support nature-based field trips, training for educators, and lessons with video interviews from inspiring role models.

"Educators: Join the Conservation Nation Academy!" *Conservation Nation* 2024, <https://conservationnation.org/educators-join-the-conservation-nation-academy/>. Accessed 17 Oct. 2024.



Links to all websites can be found on the reference page at <https://bit.ly/amivitalemedia>



# Activities

Check out these activities and lessons to support your students' learning.

## Fighting Fire with Fire

Students learn the role that fire plays in maintaining a healthy ecosystem by distinguishing the difference between a wildfire and a controlled burn and exploring how organisms in different ecosystems have adapted to fire.

"**Fighting Fire with Fire: Can Fire Positively Impact an Ecosystem?**" The Nature Conservancy, <https://www.nature.org/content/dam/tnc/nature/en/documents/nature-lab-lesson-plans/FightingFireTeacherGuide.pdf>. Accessed 1 Sept. 2024.

## Arctic Climate Connections

A three-part curriculum that engages learners in climate science by working with data from an ongoing Arctic research project. Lessons introduce students to Arctic geography, meteorology, and data allowing students to conduct measurements and work with authentic data.

"**Arctic Climate Connections.**" Cooperative Institute for Research in Environmental Sciences, University of Colorado, <https://serc.carleton.edu/NAGTWorkshops/climatechange/activities/82345.html>. Accessed 1 Sept. 2024.

## Polar Climate Change Lesson Plans

This series of educator resources provides various lesson plans to support student exploration and understanding of climate change with particular attention on polar regions. Lesson topics include: glacial melting, sea ice, ocean acidification, and CO<sub>2</sub>.

"**Polar Climate Change Lesson Plans | AMNH.**" American Museum of Natural History, 2015, <https://www.amnh.org/learn-teach/curriculum-collections/polar-climate-change-lesson-plans>. Accessed 1 Sept. 2024.

## The Great Inka Road: How Can a Road System Be an Example of Innovation?

Students explore the engineering accomplishments of the Inka Empire in the fifteenth and sixteenth centuries, including their vast road system. Learners can investigate Inka legacy and compare and contrast the historical Inka culture with many of the modern Indigenous communities presented in Kiliiii's work.

"**The Great Inka Road: How Can a Road System Be an Example of Innovation?**" National Museum of the American Indian, Smithsonian Institution, <https://americanindian.si.edu/nk360/resources/The-Great-Inka-Road-How-Can-a-Road-System-be-an-Example-of-Innovation>. Accessed 1 Sept. 2024.

All activity links can be found on the reference page at <https://bit.ly/amivitalemedia>

## Activities

## A Picture is Worth a Thousand Words: Interpreting Kiliiii's Photos

Show your students the following photographs of Kiliiii's. Lead them through close looking and interpretation of the photos using the following questions.



- What do you notice in this photograph? Gather observations from students.
- What do you think is going on? Encourage students to make connections and educated guesses. Where do you think this photo was taken? What animal do you think this is? What do you think the people are doing?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is an Inupiat community in northern Alaska pulling in a bowhead whale they have hunted. Hunting bowhead whales is an important part of their culture and livelihood. It may seem surprising or unsettling to see people killing whales, especially as they are often beloved creatures, but whaling is an important part of this community and many Native communities in the Arctic. Notice how it takes an entire village to pull up a whale with everyone working together. Bowhead whales have long been a source of food for the Inupiat and sustainable hunting practices allow for important cultural traditions like these to continue.*

All activity links can be found on the reference page at <https://bit.ly/amivitalemedia>

## Activities



- What do you notice in this photograph? Gather observations from students.
- What do you think is going on? Encourage students to make connections and educated guesses. What do you think this person is doing?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is a fire that was started on purpose. While it's true that unmanaged wildfires are a huge risk to forests and communities, fire can also be beneficial for the ecosystem, and many plants and trees especially can thrive after a fire has moved through. The type of fire in this photograph is called a controlled burn - notice how this person is creating a protective ring around the base of the tree. This and other techniques are used by experts to create manageable fires that can actually help the ecosystem thrive.*

All activity links can be found on the reference page at <https://bit.ly/amivitalemedia>

## Activities



- What do you notice in this photograph? Gather observations from students.
- What do you think is going on? Encourage students to make connections and educated guesses. What do you think this person is doing? Does this look like something familiar to you?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is a photo of a nineteen-year-old running for a pass in a co-ed practice game of ishtaboli (stickball) in Oklahoma. This person is a member of Tvshka Homma, the Choctaw Nation's men's team, and has played this traditional game since he was seven. This is in contrast with previous generations, which faced government efforts to suppress the game and other expressions of Native American culture. Players are almost always moving and wear no padding, no helmets, no gloves, and sometimes no shoes. Think about the sports that you might play, how are they similar and different? When did you start playing? Why do you enjoy playing that sport? Was there someone in your family that also played that sport?*

All activity links can be found on the reference page at <https://bit.ly/amivitalemedia>

## Activities



- What do you notice in this photograph? Gather observations from students.
- What do you think is going on? Encourage students to make connections and educated guesses. What do you think these animals are? What is this person doing?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is an Inughuit individual from a community located in what is now Greenland. He is using an incredibly long-handled net to catch birds called little auks. These birds, after being fermented in sealskin, are a traditional food in the community. Maybe that doesn't sound appealing! But this is an important food for the Inughuit. What are some traditional foods in your family? And can you think about any birds that we eat, maybe chicken? How do those get to our dinner tables? Think about some of the similarities and differences.*

All activity links can be found on the reference page at <https://bit.ly/amivitalemedia>

## Activities



- What do you notice in this photograph? Gather observations from students.
- What do you think is going on? Encourage students to make connections and educated guesses. What object is this man working on creating?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is a photo of a Tla-o-qui-aht elder and carver who is drawing the final designs on a totem pole. This specific totem pole was carved to memorialize the deaths of Tla-o-qui-aht from the pandemic, Canada's residential schools, and missing and murdered Indigenous women in Tofino, Canada. Many Indigenous communities created totem poles to tell stories, commemorate ancestors, or share cultural beliefs. Of this totem pole, the master carver said "when the Europeans came, they said we were illiterate, but so were they– they couldn't read our totem poles." Do you like to create anything? What is your creative process like, and do you ever like to tell stories with your art?*

All activity links can be found on the reference page at <https://bit.ly/amivalemedia>

## Activities

## Relevant Articles to Read and Discuss - Science Journal for Kids (and Teens)

The Science Journal for Kids (and Teens) shares current peer-reviewed scientific research adapted for students and their teachers. They create articles written at various learning levels that include vocab lists, discussion questions, additional supporting material, and lesson plan ideas.

Articles relevant to Kili'i's work include: *How can polar bears survive longer in a changing climate?* (<https://www.sciencejournalforkids.org/articles/how-can-polar-bears-survive-longer-in-a-changing-climate/>), *The Arctic is melting - so what?* (<https://www.sciencejournalforkids.org/articles/the-arctic-is-melting-so-what/>), and *A burning question: How much will climate change cost?* (<https://www.sciencejournalforkids.org/articles/a-burning-question-how-much-will-climate-change-cost/>).

**Elitsa. "How can polar bears survive longer in a changing climate?"** *Science Journal for Kids and Teens*, Dec. 2022, <https://www.sciencejournalforkids.org/articles/how-can-we-keep-our-mountains-healthy/>. Accessed 1 Sept. 2024.

**Elitsa. "The Arctic is melting - so what?"** *Science Journal for Kids and Teens*, Oct. 2015, <https://www.sciencejournalforkids.org/articles/the-arctic-is-melting-so-what/>, Accessed 1 Sept. 2024.

**Elitsa. "A burning question: How much will climate change cost?"** *Science Journal for Kids and Teens*, Mar. 2017, <https://www.sciencejournalforkids.org/articles/a-burning-question-how-much-will-climate-change-cost/>. Accessed 1 Sept. 2024.



All activity links can be found on the reference page at <https://bit.ly/amivalemedia>

VITAL IMPACTS



All photos by Kiliiii Yuyan