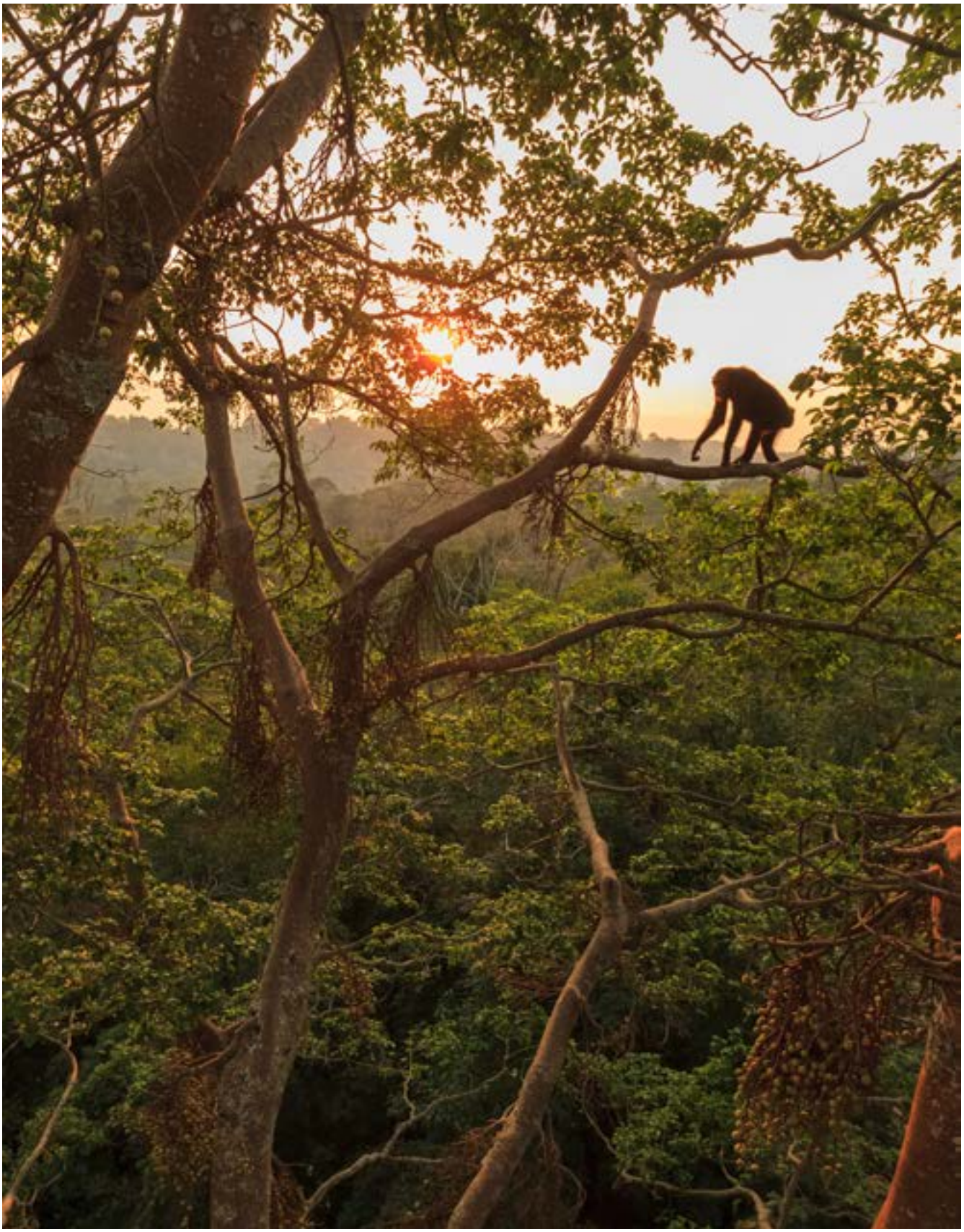
VITAL IMPACTS | changemaker

Student Speaker Series

FEATURING

Ronan Donovan



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All website references in this document are consolidated at
https://bit.ly/ronandonovanmedia

Ronan Donovan

National Geographic Explorer Ronan Donovan is a wildlife biologist turned conservation photographer. He uses visual storytelling to illuminate stories related to our fellow social mammals to remind us that we are all connected. Ronan embeds for months at a time, year after year, with wild families of wolves, chimpanzees, and mountain gorillas to capture imagery that highlights our shared challenges, behaviors, and family bonds.

Ronan's film work, titled Kingdom of the White Wolf has aired on NatGeo Wild, he's also filmed for several PBS Nature series, and for the upcoming series Planet Earth 3. Ronan's first photo exhibition, entitled Wolves, is currently traveling around the US for the next 4 years.

In his Student Speaker Series talk, Ronan will take a deep dive into what it means to be a social mammal from the perspective of our wild kin.

What similarities do all social mammals share? How are we similar to chimpanzees, mountain gorillas and wolves? All social mammals live in groups in order to achieve together what they cannot alone.

Once an untamable child with two felonies by the age of 13, Ronan Donovan transformed his life and now has spent over 20 years studying wildlife, first as a field biologist and later as a photographer and filmmaker for National Geographic.

In the end, we can learn a great deal about ourselves as we look into the lives of wild animals.

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

Learn even more about Ronan at Changemaker Talent. (https://www.changemakertalent.com/speakers/ronan-donovan)

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

Relevant Concepts and Standards

Science concepts related to Ronan's content area include:

- Biodiversity, ecosystems, habitat, food webs, keystone species, trophic levels, conservation, animal adaptations, human-predator conflict, human environmental impact

5th-8th grade NGSS standards that may be supported by Ronan's content include:

- 5-LS2-1 - Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- 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-LS2-2 - Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- MS-LS2-3 - Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of 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

Wolves: Photography by Ronan Donovan - An Educational Companion

In this excellent overview, read about the wolves that Ronan has worked with in two locations - Yellowstone National Park and Ellesmere Island in Canada. Learn how the removal and later reintroduction of wolves in Yellowstone greatly altered the food web and the importance of these keystone species to the ecosystem. (Presented in English and Spanish)

"Wolves: Photography by Ronan Donovan - An Educational Companion." *National Geographic*, https://education.nationalgeographic.org/resource/wolves-maps/. Accessed 6 Nov. 2023.

Chimps and Humans in Conflict

Areas where humans and wildlife overlap can create challenges for both humans and animals. As chimpanzee habitat continues to decline, they are forced closer and closer to populated areas with sometimes tragic outcomes.

Donovan, Ronan. "Chimps and Humans in Conflict." *ArcGIS StoryMaps*, 31 May 2023, https://arcg.is/191jTK1. Accessed 6 Nov. 2023.

Human-Predator Coexistence Project

Learn more about the complicated relationship between humans and animal predators, especially in areas where we overlap with these wild animals such as the greater Yellowstone ecosystem where families raise livestock in the same areas where wild wolves roam. Note: this article contains images of dead wolves which may be sensitive to some.

Donovan, Ronan. "Human-Predator Coexistence Project." *ArcGIS StoryMaps*, 9 Jan. 2023, https://storymaps.arcgis.com/stories/91d898fa1e554ea1a44c98005346e443. Accessed 6 Nov. 2023.

25 Years After Returning to Yellowstone, Wolves Have Helped Stabilize the Ecosystem

25 years after gray wolves returned to Yellowstone National Park, the predators that some feared would wipe out elk have instead proved to be more of a stabilizing force. Explore new research highlighting wolves' role in creating resilient elk herds.

Peterson, Christine. "25 Years After Returning to Yellowstone, Wolves Have Helped Stabilize the Ecosystem." *National Geographic Magazine*, National Geographic Society, 10 Jul. 2020, https://www.nationalgeographic.com/animals/article/yellowstone-wolves-reintroduction-helped-stabilize-ecosystem. Accessed 6 Nov. 2023.

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

Background Information

Films and Video

Photographing the Wild Wolves of Yellowstone

Ronan introduces his work photographing the wolves of Yellowstone to help others learn more about the important role these apex predators play in the ecosystem.

Run time: 3 minutes

"Photographing the Wild Wolves of Yellowstone | Exposure." *YouTube*, uploaded by National Geographic, 30 Apr. 2016, https://youtu.be/6AynjXLl9PE. Accessed 6 Nov. 2023.

Yellowstone Wolf Dynasty - The Pack

Learn more about the wolves of Yellowstone and how Ronan sets up camera traps to remotely photograph a uniquely isolated wolf pack deep in the interior of the park.

Run time: ~6 minutes

Donovan, Ronan. "Yellowstone Wolf Dynasty - The Pack." *YouTube*, uploaded by Ronan Donovan, 8 Jan. 2020, https://youtu.be/JqsXAcNW2uI. Accessed 6 Nov. 2023.

What Is It Like to Live With Wolves?

At the National Geographic Storytellers Summit, Ronan discusses his time documenting and living with Arctic wolves. Watch a day in the life of a small pack of Arctic wolves trying to survive in this harsh environment.

Run time: 20 minutes

"What Is It Like to Live With Wolves? | Ronan Donovan | Storytellers Summit 2020." *YouTube*, uploaded by National Geographic Society, 6 Feb. 2020, https://youtu.be/UVMOdBinSjA. Accessed 6 Nov. 2023.

Earth's Tapestry

Learn about Ronan's path to becoming a photographer, why he is drawn to wolves, and how he uses their stories to share about the interconnectedness of nature.

Run time: 6 minutes

Donovan, Ronan. "Earth's Tapestry." *Vimeo*, uploaded by Think Less, 7 Apr. 2023, https://vimeo.com/815669756. Accessed 6 Nov. 2023.

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

Empathy through Photography

Take a peek behind the curtain to learn more about how Ronan uses storytelling through photography to create empathy. Listen to a story about a group of chimpanzees that highlights the ways that photos and film can be tools for conservation.

Run time: 13 minutes

Donovan, Ronan. "Empathy through Photography - Ronan Donovan, National Geographic Explorer." *Vimeo*, uploaded by WWF Fuller Fund, 13 Dec. 2017, https://vimeo.com/815669756. Accessed 6 Nov. 2023.

Websites

National Geographic Food Web Collection

A collection of articles, encyclopedia entries, and more about food chains and webs created and curated by National Geographic.

"Food Chains and Webs." *National Geographic*, https://education.nationalgeographic.org/resource/resource-library-food-chains-and-webs/. Accessed 6 Nov. 2023.

National Park Service: Yellowstone

Learn more about Yellowstone by exploring photos, articles, and educational resources about the park.

"Learn about the Park - Yellowstone National Park (U.S. National Park Service)." *National Park Service*, Sept. 2019, https://www.nps.gov/yell/learn/index.htm. Accessed 5 Nov. 2023.

Center for Human-Carnivore Coexistence

Carnivores and humans often struggle to coexist in the same space - often there are issues with people impacted or frightened and predators killed. Learn more about these complex relationships and see examples of projects being done to create spaces where both humans and carnivores can thrive.

"CHCC - Center for Human-Carnivore Coexistence." *Center for Human-Carnivore Coexistence,* Colorado State University, https://sites.warnercnr.colostate.edu/centerforhumancarnivorecoexistence/. Accessed 22 Oct. 2023.

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.

Videos relevant to Ronan's work include *Yellowstone to Yukon* and *Banff National Park Bison, parts 1 and 2* for their examination

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of the reintroduction of bison to restore ecosystem balance, similar to how wolves were brought back to Yellowstone.

"Yellowstone to Yukon | Protecting North America's Greatest Wildlife Corridor." YouTube, uploaded by Exploring by the Seat of Your Pants, 24 Nov. 2021, https://www.youtube.com/watch?v=oRZB6KaRhIg. Accessed 6 Nov. 2023.

"Banff National Park | Bison Part One." *YouTube,* uploaded by Exploring by the Seat of Your Pants, 26 Oct. 2019, https://www.youtube.com/watch?v=3ltrKejA6Ns. Accessed 6 Nov. 2023.

"Banff National Park | Bison Part Two." *YouTube,* uploaded by Exploring by the Seat of Your Pants, 26 Oct. 2019, https://www.youtube.com/watch?v=gCKZSjSqIp4. Accessed 6 Nov. 2023.

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 background materials can be found on the reference page at https://bit.ly/ronandonovanmedia

Activities

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

National Geographic - Gray Wolf Educator Guide

Target audience: Grades 5-8

Use this National Geographic guide to introduce students to wolf biology and ecology with a collection of classroom activities about these keystone species.

"Gray Wolf Educator Guide." National Geographic, https://education.nationalgeographic.org/resource/gray-wolf-educator-guide/. Accessed 6 Nov. 2023.

Wolves of Yellowstone

Target audience: Grades 7-8

This set of activities by PBS Learning Media introduces students to the ecological impact of wolf reintroduction and the different perspectives of various stakeholders involved with the project. The lesson plan is divided into four parts that each focus on a different ecological or environmental topic surrounding animal reintroduction and trophic cascades.

"Wolves of Yellowstone | Lesson Plan | PBS Learning Media." PBS, Public Broadcasting Service, https://mass.pbslearningmedia.org/resource/331db173-a528-46ae-985c-e2432ebc6dc2/wolves-of-yellowstone-teacher-guide. Accessed 6 Nov. 2023.

Exploring Trophic Cascades

Target audience: Grades 6-8

This interactive Click & Learn module from HHMI BioInteractive explores examples of how changes in one species can affect species at other trophic levels and ultimately the entire ecosystem using a classic trophic cascade triggered by the loss of sea otters from a kelp forest ecosystem. Students then test their understanding of trophic cascades in four other case studies, where they predict the relationships among different species and the consequences of ecosystem changes.

"Exploring Trophic Cascades." HHMI Biointeractive, Howard Hughes Medical Institute, 13 Sept. 2016, https://mass.pbslearningmedia.org/resource/331db173-a528-46ae-985c-e2432ebc6dc2/wolves-of-yellowstone-teacher-guide. Accessed 6 Nov. 2023.

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

Activities

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

Target audience: Grades 5-8

Show your students the following photographs of Ronan'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. What is the person in the helicopter doing? Do you think they are trying to hurt the wolves or help them?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This photo shows a biologist using a tranquilizer gun to dart a lead male wolf from a pack in Yellowstone. After being hit with the dart, the wolf falls unconscious which allows researchers to get close, take measurements, do a wellness check, and fit him with a new tracking collar. Because the wolves are wary of humans, a helicopter is one of the most reliable ways to get close enough to them to check on them in this way.*

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

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. This is a photo of Ronan. Why do you think he's posed near a dead carcass?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is a photo taken with a camera trap - that's a camera set up to automatically and remotely take pictures of wildlife without a person needing to be there. Usually they are triggered by movement. In this photo, Ronan is simply testing to see if the camera is working the way it's supposed to by acting like an animal walking nearby. In his work with wolves in Yellowstone, he would often put camera traps by dead animals since wolves are often drawn there to attempt to scavenge a meal.*

You can see a successful shot using this camera here:

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

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 kind of animal do you think this carcass is? Do you think the wolves killed it? Why or why not, what clues do you have?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: This is the carcass of a bison. These wolves did not kill the bison, instead they found it after it had already drowned in the river. One clue is that the bison is covered in a layer of snow, even on some of the exposed bones and muscle of its body. It is rare for wolves in Yellowstone to bring down an adult bison because they are so large and formidable. It's much more common for wolves to hunt elk, which make up 85% of their winter diet.*

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

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. If you've seen photos of chimpanzees before, does this feel similar? Different? What about the environment that these chimpanzees are in?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: These are two adult male chimpanzees sitting at the edge of Kibale National Park in Western Uganda. To their backs is the Park, with protected forest habitat, and in front of them is a huge expanse of farmland where tea is being grown. These habitat edges can create unique environments that bring humans and wildlife particularly close together. That can cause problems for animals, either if they venture too far outside of their usual habitat, or if humans venture into these protected spaces.*

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

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. How old do you think these wolves are? Where do you think this photo was taken? Does this image remind you of any domesticated dogs you know?
- What else do you wonder about what's going on in this image?
- *Reveal the context of the photograph: These are four 12-week-old Arctic wolf pups on the left, cuddled together with their big sister who is about a year old. Because these Arctic wolves had not been around humans before, they were not very timid and Ronan was able to get quite close to them and could take photos and video while being mostly ignored by them. This photo was taken in the Arctic on Ellesmere Island in Canada - it may surprise you to find out that the Arctic isn't always covered in snow! These wolf pups may also remind you of pet dogs, especially the way they are smaller and cuddled together. The dogs we now have as pets were originally domesticated from a shared, now-extinct, wolf ancestor to the modern wolf.*

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

Activities

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

Target audience: Grades 5-8

Students can read Wolves: Photography by Ronan Donovan - An Educational Companion (https://education.nationalgeographic.org/resource/wolves-maps/) which gives an overview of wolves in Yellowstone and their impact on the food web and includes follow-up discussion and check for understanding questions (presented in English and Spanish).

Wolves: Photography by Ronan Donovan - An Educational Companion.

National Geographic, https://education.nationalgeographic.org/resource/wolves-maps/. Accessed 6 Nov. 2023.

Additionally, 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. Another article relevant to Ronan's work is: How can cheetahs and farmers get along better? (https://www.sciencejournalforkids.org/articles/how-can-cheetahs-and-farmers-get-along-better/) which also includes a lesson plan and resources on human-wildlife conflict that explores areas where humans and animals overlap.

Students can make connections between this example with cheetahs to some of Ronan's work with humans' relationships with wolves (https://storymaps.arcgis.com/stories/91d898fa1e554ea1a44c98005346e443) and chimpanzees (https://arcg.is/191jTK1).

Elitsa. "Resolving human-wildlife conflict – a role-play lesson." Science Journal for Kids and Teens, 27 Aug. 2021, https://www.sciencejournalforkids.org/articles/lesson-ideas/resolving-human-wildlife-conflict/. Accessed 6 Nov. 2023.

Donovan, Ronan. "Human-Predator Coexistence Project." *ArcGIS StoryMaps,* 9 Jan. 2023, https://storymaps.arcgis.com/stories/91d898fa1e554ea1a44c98005346e443. Accessed 6 Nov. 2023.

Donovan, Ronan. "Chimps and Humans in Conflict." *ArcGIS StoryMaps,* 31 May 2023, https://arcg.is/191jTK1. Accessed 6 Nov. 2023.

The link for this Read and Discuss article can be found at https://bit.ly/ronandonovanmedia

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Stay in Touch!

We would love to hear from you. Visit us on our website at vitalimpacts.org, follow us on Instagram at @vital.impacts, and email us at hello@vitalimpacts.org with any questions or ideas!

Did you recently attend a Vital Impacts Student Speaker Series event. Please also let us know what you and your students loved and what we can improve by filling out a brief (5-7 minute) survery at https://bit.ly/vitalsurvey

All photos by Ronan Donovan