



EDUCATOR RESOURCE GUIDE



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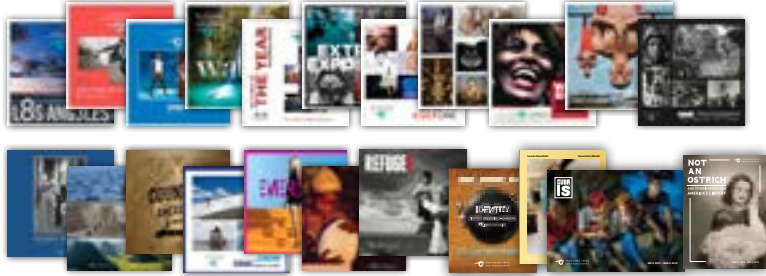
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HISTORY • EXHIBITS • DESIGN

HISTORY Annenberg Space for Photography opened to the public on March 27, 2009. It is the first solely photographic cultural destination in the Los Angeles area. The Photography Space is an initiative of the Annenberg Foundation and its board of directors. Its creation builds upon the Foundation's long history of supporting the visual arts.



EXHIBITS Annenberg Space for Photography does not maintain a permanent collection of photographs; instead, exhibitions change every four to six months. The content of each show varies and appeals to a wide variety of audiences.

DESIGN The interior of the Space is influenced by the mechanics of a camera and its lens. The central, circular Digital Gallery is contained within the square building much as a convex lens is contained within a camera. The Digital Gallery's ceiling features an iris-like design reminiscent of the aperture of a lens. The aperture design also enhances the Gallery's acoustics.

The Print Gallery curves around the Digital Gallery, representing the way film winds within a camera. The curvature of the ceiling line in the Print Gallery mimics the design of a film canister.



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THE DIGITAL GALLERY

Our custom 18' rear projection wall-sized screen is paired with the latest true 6K digital resolution to display photography and films with stunning clarity, brightness and contrast. The Digital Gallery allows for the display of thousands of images in a comparatively small location. In addition to showing images from the exhibiting photographers, the Digital Gallery screens short documentary films created to accompany the print exhibits.



THE CURRENT EXHIBIT

AGE RECOMMENDATION • OVERVIEW

AGE RECOMMENDATION

The National Geographic Photo Ark is an exhibition that is appropriate for all ages.

OVERVIEW

The *National Geographic Photo Ark* is a multiyear project led by photographer Joel Sartore, whose life mission is to photograph every species living in the world's zoos and wildlife sanctuaries. He has visited about 40 countries, creating an archive of global diversity that includes portraits of more than 8,000 species.

From the familiar to the exotic, Annenberg Space for Photography's presentation of the *Photo Ark* features nearly 100 captivating, large-format prints of the world's animals bringing visitors eye-to-eye with endangered wildlife, inspiring them to save species at risk.

The exhibit also includes a short documentary film, interactive games, a studio where guests can be photographed with their favorite animal as a backdrop, a gallery devoted to California's indigenous species, and a full slate of programming including field trips, workshops, and our acclaimed Iris Nights lecture series.

Sartore's powerful photos mirror a powerful message—shared with humor and compassion—that to know these animals is to want to save them.

Photo Ark is organized and traveled by the National Geographic Society.

For more educational resources about the Photo Ark, visit www.NatGeoEd.org/PhotoArk

THE CURRENT EXHIBIT

JOEL SARTORE – BIOGRAPHY



Photo Credit: Graham S. Jones, Columbus Zoo and Aquarium.

JOEL SARTORE, NATIONAL GEOGRAPHIC PHOTOGRAPHER AND FELLOW,
NATIONAL GEOGRAPHIC PHOTO ARK FOUNDER

Joel Sartore is a photographer, speaker, author, teacher, conservationist, National Geographic fellow and regular contributor to *National Geographic* magazine. His hallmarks are a sense of humor and a midwestern work ethic.

Sartore started the Photo Ark some 11 years ago in his hometown of Lincoln, Nebraska. Since then, he's visited 40 countries in his quest to create a photo archive of global biodiversity. Sartore has produced several books including *RARE: Portraits of America's Endangered Species*, *Photographing Your Family*, and two new National Geographic Photo Ark books: *The Photo Ark* and *Animal Ark*.

Photo Ark fans are also invited to join the conversation on social media with #SaveTogether and learn more about how to get involved with the project at NatGeoPhotoArk.org.

In addition to the work he has done for National Geographic, Sartore has contributed to *Audubon*, *Life*, *The New York Times*, *Sports Illustrated*, and numerous book projects. Sartore and his work have been the subjects of several national broadcasts, including *National Geographic's Explorer*, *NBC Nightly News*, *NPR's Weekend Edition*, *Fresh Air with Terry Gross*, and the PBS documentary series *Rare: Portraits of the Photo Ark*. He is also a regular contributor on *CBS Sunday Morning*.

Sartore graduated from the University of Nebraska with a degree in journalism. He currently lives in Nebraska with his wife and children.

PRE-VISIT ACTIVITY

Recommended for Grades 3-5

Title: Threatened Animals and Their Habitats

Connection to the Exhibit: Joel Sartore, the photographer who founded the National Geographic Photo Ark, wants everyone to think about the serious consequences of species extinction. One section of the Annenberg Space for Photography's *Photo Ark* exhibition focuses on the animals that have unfortunately already been lost to extinction and those that are currently in danger of being lost. One of the many ways in which animals find themselves on the list of vulnerable, endangered, or extinct species lists is that their habitats are threatened or even destroyed. Animals need a healthy habitat and ecosystem in order to thrive. In this activity, students will discuss and research habitat threats and preservation by focusing on a handful of species that Sartore has documented in the Photo Ark.

Common Core Standards for English Language Arts: Grades 3-5

College and Career Readiness Anchor Standards (CCR): Reading

- Read closely to determine what the text says explicitly and make logical inferences; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
- Read and comprehend complex literary and informational texts independently and proficiently.

College and Career Readiness Anchor Standards (CCR): Speaking and Listening

- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

Relevant Terms and Concepts:

Threat, habitat, thrive, species, vulnerable, endangered, critically endangered, extinct, reproduction

Materials Needed:

- Internet, overhead projector or SmartBoard, large printed copies of photographs (enough for students to share in groups), a list of teacher-approved websites for use as sources for group research.

Large Group Activity:

- With an overhead or SmartBoard, show students a variety of photographs (see Appendix I). As students view the series of animal photographs, encourage them to think about what these animals have in common.
- Click through the photographs again, this time more slowly and pausing on each for several seconds. Ask students to raise their hands and offer their guess as to what the animals have in common. The answer is that they are already, or in danger of, becoming extinct. Students might not arrive at that exact answer, so you should be prepared to “reveal” the answer after a robust group discussion.
- Explain further what this means – that very few of these species remain in the wild. Introduce students to the following terms: vulnerable, endangered, critically endangered, and extinct. Tell students that all of these animals can be described as “threatened,” but these terms allow them to identify the threat level with more precision. Terms such as “vulnerable,” “endangered,” and “critically endangered” refer to different levels of animal populations in the wild, but all are in danger of extinction. Extinction means that there are no longer any more of these species alive or capable of reproduction.

Small Group Activity:

- Have students work in small groups of four (maximum) and assign each group an animal and instruct them to draw their natural habitats. Give each group a copy of one of the animal photographs. Tell students they will investigate and then draw a threatened or extinct species’ habitat or former habitat.
- Students should research and find out the answers to the following questions:
What are the main parts of a habitat? What do all animals need to live and thrive?
 - Answer: Animals need shelter, water, food, and space in their habitats.
- Encourage students to research the animals using books and the internet. After they have found out where their assigned animals live (or once lived), give them time to illustrate their particular animal’s habitat.
- Next, ask students to use their research sources to look for reasons why their animals are/were in danger. Ask them to consider what changes occurred in the animal’s habitat or ecosystem and what was the evidence that led scientists to their conclusion. Encourage them to add this information to their drawings and include a representation of something that threatened the animals’ existence.
- Invite each group to share information about their assigned animal, explain their drawings, and talk about some of the evidence and reasons for the destruction of their habitats. Encourage students to ask each other questions.

Homework Activity:

- Ask students to conduct a short research project on one of the following two animals: the San Joaquin Kit Fox and the polar bear. Instruct students to focus their research on identifying the ways in which human action threatens the habitats of the animals they previously researched in class.
- Have students create a list of ideas for how humans can help keep the animal that they selected to research from being threatened.
- Finally, ask students to create an illustrated poster that shows their solutions for how to help either the kit fox or the polar bear.

PRE-VISIT ACTIVITY TWO

Recommended for Grades 6-12

Title: Storytelling Through Images

Connection to the Exhibit: As the saying goes, “a picture is worth a thousand words,” but photographers such as Joel Sartore show us that pictures can tell an entire story. Photo essays are a way photographers can tell stories with images, often in an effort to connect the viewer with their subject and appeal to the emotions of their audience. Sartore’s photographs—and his way of talking about his work—use a variety of techniques to engage us with his mission. In this activity, students will investigate the medium of the photo essay, analyze Sartore’s rhetoric, and identify how he makes us feel compassion for the animals in his photographs.

Common Core Standards for English Language Arts: Grades 6-12

College and Career Readiness Anchor Standards (CCR): Speaking and Listening

- Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.
- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

College and Career Readiness Anchor Standards (CCR): Writing

- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

College and Career Readiness Anchor Standards (CCR): Language

- Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Relevant Terms and Concepts:

Anecdote, photo essay, conservation, extinction, legislation

Materials Needed:

- Internet access

Large Group Activity:

- Activate background knowledge about the purpose of storytelling: *What is storytelling and why do people tell stories?* In order to do this, ask students to think about the last time they heard a really great story that stuck with them long after they heard it. After a minute or two of reflection, have students turn to a partner and share their response.

- After a couple minutes, invite students to share their most memorable stories with the class. Ask them to think more about why they remember some stories more than others by responding to the following questions:
 - What was it about the way that you heard or experienced this story that you think made such an impact on you?
 - What were some techniques the storyteller used that you can remember that might have helped you connect emotionally to their story?
- After hearing from a few students, continue the discussion, and ask the following questions:
 - What are some common methods people use to tell stories in order to share them with others?
 - What method of storytelling might a storyteller use if he or she wants the audience to do or feel something?
 - Answers will vary. Possible answers: Storytellers might use visuals, real-life examples, personal anecdotes, or ask listeners to put themselves in the story.
 - Does storytelling always require words? What are some examples of storytelling that does not involve words?
- Explain that some storytellers use photographs as part of their storytelling method. Use this photo essay by photographer Daniel Arnold titled “Last Prom.” Ask students to review this photo essay twice—the first time, students should look only at the photographs; then, look at the photos and the words together. Ask students to participate in a discussion addressing the following questions:
 - What story does this series of photographs tell?
 - After reviewing the photo essay by looking only at the images, do you think using only photographs to tell a story is possible?
 - When you read the accompanying text, did it change your impression of the story being told by just the photographs?
 - How would this story be different if the storyteller only used words and no photographs, or photographs and no words?
- View video clips of Joel Sartore speaking about photographing animals.
 - Introduce the video clip “[Grizzlies, Wolves, and Koalas: Conservation Photography](#)” by explaining that Joel Sartore is a storyteller and photographer for National Geographic.
 - Ask students to think about the following focus questions as they watch the video:
 - *How can good photographs help conservation efforts?* (Photographs are engaging, make people ask questions, and encourage people to care. They also help people make a personal connection with the animals by seeing them.)
 - *Why does Joel Sartore use photographs to tell stories?* (He believes that photographs motivate people to care and hopefully make positive changes, such as the Australian government passing legislation to protect koalas.)

- Introduce the second video clip, “[Saving Animals Through Photography](#),” by telling students that Joel Sartore is working on a project called the Photo Ark. He is taking photographs of animals in captivity, sanctuaries, or under human care. Ask students to consider the following focus questions while watching the clip:
 - *What is Joel Sartore’s goal in creating the Photo Ark?* (He is taking photos of all animal species in captivity, sanctuaries, or under human care as a way to document them, especially endangered ones, for future generations. His goal is to encourage people to care about them and take action now, before it’s too late.)
 - *What techniques does he use to get people to care about the animals, and why does he want them to care?* (He photographs the animals on black or white backgrounds, instead of their habitat in the wild, so they are viewed equally and without distractions, as if you are looking at the portrait of a person. He wants to bring people’s attention to the animal extinction crisis.)

Homework Activity:

- Offer students a selection of three Photo Ark photographs and tell students to choose one with which they feel a strong connection. Ask students to write a short personal essay in response to the following questions:
 - Why does this photo interest you?
 - What story does this photo express to you? Why? How?
 - The goal of Photo Ark is to get people to care about species and want to protect them. In what ways does this photo inspire those feelings in you?

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EXHIBITION ACTIVITY



CONSERVING SPECIES

The wild status of all animals in the Photo Ark is designated by the IUCN Red List of Threatened Species. This list evaluates the wild population of every known animal and determines population risks.

SEE WHAT WE CAN #SaveTogether

IUCN Status	Photo Ark Animal	What threats do they face? How can we help?	Zoo Animal	What threats do they face? How can we help?
Least Concern (LN)				
Near Threatened (NT)				
Vulnerable				
Endangered				
Critically Endangered				
Extinct in the Wild (EW)				

Haiku Corner

A Haiku is a short three-line poem with a 5, 7, 5 syllable structure. Most Haikus are inspired by an element of nature, a moment of beauty, or another poignant experience.

My Haiku:

Pick an endangered species (or just the coolest animal you saw!) and write a Haiku about that animal.

*example: Joel Sartore speaks
For animals have no voice
What will you do next?*

POST-VISIT ASSIGNMENT

Recommended for Grades 3-5

Title: Karner blue butterfly

Connection to the Exhibit: National Geographic's *Photo Ark* reminds us that all species are critical to the health and survival of our planet, even ones that are no bigger than our pinkie finger. In this activity, students will use the Karner blue butterfly as a case study for a species that was once on the brink of extinction, but is now experiencing a resurgence in population because of positive human intervention. Students will also experiment with writing from an advocate's perspective on behalf of a species that needs saving, much in the same way that photographer Joel Sartore advocates for conservation with his camera.

Common Core Standards for English Language Arts: Grades 3-5

College and Career Readiness Anchor Standards (CCR): Reading

- Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- Read and comprehend complex literary and informational texts independently and proficiently.

College and Career Readiness Anchor Standards (CCR): Speaking and Listening

- Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and make sure the organization, development, and style are appropriate to task, purpose, and audience.

College and Career Readiness Anchor Standards (CCR): Writing

- Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Draw evidence from literary or informational texts to support analysis, reflection, and research.

College and Career Readiness Anchor Standards (CCR): Speaking and Listening

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

Relevant Terms and Concepts:

Karner blue butterfly, lupin, cocoon, habitat, oak savanna, pine barrens, extinction, resurgence, preservation

Materials Needed:

- Overhead projector or SmartBoard, internet access, colored pencils or crayons, legal-size sheet of paper.

Large Group Activity:

- To begin group discussion, ask students to recall the section of the *Photo Ark* exhibition that focused on extinct species. Do they recall a specific animal whose photo made an impression on them? Did anything they learn about extinction during their visit surprise them? If so, what was it?
- Introduce Joel Sartore's picture of the Karner blue butterfly onto an overhead or Smartboard (see Appendix II). Now ask students to hold out their pinkie fingers. Inform them that in real life this butterfly is smaller than their pinkie finger.
- Next, share with students that the Karner blue butterfly is an example of an animal that was on the brink of extinction, but has seen a rise in population after positive human intervention. This butterfly represents a success story. Ask students to recall the section of the *Photo Ark* exhibition called "Comeback Stories." Do they remember any of the animals that were in that section?
- Explain to students that similar to those animals shown in "Comeback Stories," the Karner blue butterfly faced extinction because of changes to its habitat and the scarcity of its only food source, the wild lupin. The wild lupin is a flower that these butterflies not only use for food, but also attach to their cocoon and where they lay their eggs.
- Ask students to think about wildfires and to share what they know about wildfires and the effect they have on the natural environment. Ask students to consider whether wildfires are a good or a bad thing. Is it possible for a wildfire to ever be beneficial?
- Reveal to students that wildfires are actually an important part of our ecosystem, even though they can be scary and destructive. Because humans live closer and closer to animal habitats, we do our best to stop wildfires before they happen, but that's not always a good thing. The suppression of wildfires and the clearing of land for farming and development has made the land less lupin-friendly and thus the single food source of the Karner blue butterfly became harder and harder for them to find.
- Share with students that the key to the successful resurgence of the Karner blue butterfly population is the result of scientists studying their habitats (the oak savanna and pine barrens) and learning how best to ensure that the distance between lupin-dense areas in these habitats is manageable for these small creatures to fly to.

Small Group Activity:

- Prompt students to consider why butterflies are important. What are some reasons we should care about the potential extinction of one kind of butterfly like the Karner blue butterfly?

- Ask students to work in groups to complete a short research project about the importance of preserving butterflies. After conducting their research, ask each student group to identify their top three most important reasons to protect butterflies. Students should write these reasons in their own words in the form of three sentences that are meant to persuade an audience.
- Once each group has come up with their top three reasons, ask students to share their findings with the rest of the class. If there is an overlap in terms of what the students have identified as most important, ask them to determine which reasons were the most persuasive and which student had the most persuasive sentence.

Homework Assignment:

- As a homework assignment, ask students to design an illustrated poster advocating for the continued preservation of the Karner blue butterfly. This poster should have some text that serves to convincingly argue for the preservation of this species. The majority of the poster should focus on illustrating the following aspects of the Karner blue butterfly's life:
 - The butterfly, with special attention to its unique physical characteristics
 - The habitats where you find them (the oak savanna and pine barrens)
 - Their sole food source (wild lupin)
 - Students' top three reasons why butterfly conservation is important

POST-VISIT ASSIGNMENT TWO

Recommended for Grades 6-12

Title: Black Rhino and Rhino Poaching

Connection to the Exhibit: The path to conservancy isn't easy or simple, and in the case of rhinos this is especially so. Rhinos, and other animals who have long been hunted for parts of their body like horns or tusks are currently protected by international trade bans. Despite their inability to legally trade these products internationally, poachers are still killing these animals and smuggling the goods through the black market. If the solutions in place haven't solved the rhino poaching problem, is there a better solution? Who can we believe when everyone involved has something to gain? This activity encourages students to take a deep-dive into the history of rhino horn trade, the controversy surrounding the recent repeal of the domestic rhino horn trade in South Africa, and asks them to think critically about the proposed solutions to this crisis that threatens the survival of this species.

Common Core Standards for English Language Arts: Grades 6-12

College and Career Readiness Anchor Standards (CCR): Reading

- Read closely to determine what the text says explicitly and make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
- Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
- Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
- Read and comprehend complex literary and informational texts independently and proficiently.

College and Career Readiness Anchor Standards (CCR): Speaking and Listening

- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

College and Career Readiness Anchor Standards (CCR): Writing

- Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.



- Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
- Draw evidence from literary and/or informational texts to support analysis, reflection, and search.
- Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting, or a day or two) for a range of tasks, purposes, and audiences.

Relevant Terms and Concepts:

Poaching, trafficking, critically endangered, civil unrest, black market, economic uncertainty

Materials Needed:

- Overhead projector or SmartBoard, internet access, chart paper (optional), copies of the articles in Appendix III (one for each student).

Large Group Activity:

- Introduce the topic of black rhinos and the rhino horn trade by showing Joel Sartore's photo of the black rhino with an overhead projector or Smartboard. Explain to students that this is a photograph of the African black rhino, a critically endangered species that saw its population decrease by 98 percent between the years 1960 and 1995. Ask if any students are familiar with poaching and the reasons why some people pay poachers to kill rhinos for their horns. If they do not know, encourage students to ask questions now that they have some knowledge of the rhino horn trade. Help students to create a group K/W/L chart ("Already Know," "Want to Know," "What I've Learned") to facilitate discussion; ask students to take notes that they can reference at home.
- Poaching is part of the cycle that has led to the killing of rhinos and other animals with horns and tusks. War and civil unrest can lead to a demand for rhino horns for use as currency on the black market. Poverty can lead people to look for ways to make money wherever and however they can. When rhino horns are worth their weight in gold on the black market, ordinary people turn to poaching to earn a living. War and civil unrest lead to economic uncertainty which can lead to poverty. Draw a circular diagram of this cycle to visually show students how the rhino horn trade works.
- Ask students what they think drives the market for rhino horns (this might have been something they covered while discussing what they already know about the rhino horn trade as a whole). Pass out copies of the article, "What Drives the Demand for Rhino Horns" from *The Guardian* (see Appendix III) and ask students to read through the article and take notes to use for reference later.
- Now that students know more about rhino poaching, the rhino horn trade, and the circumstances that surround the endangerment of black rhinos, ask students to contribute to the "L" portion of the K/W/L chart they began earlier ("What I've Learned").

Homework Assignment:

- To begin their homework assignment, ask students to review their notes from the class discussion on the rhino horn trade.
- Instruct students to read the article “Special Investigation: Inside the Deadly Rhino Horn Trade” from *National Geographic* (see Appendix III). Ask students to take notes while they read, particular the sections that mention John Hume.
- Next, ask students to read a more recent article from *National Geographic* published in August 2017, “It’s Now Legal to Sell Rhino Horn in South Africa. The World’s Top Breeder Makes His Move” (see Appendix III). Instruct students to take notes as they read.
- After they have completed their readings, ask students to write a five- to seven-page essay using the following prompt:
 - “In the first article, the author states that ‘Groenewald and John Hume are said to believe that breeding rhinos for the purpose of harvesting and then legally selling their horns will reduce poaching.’ After reading about the arguments for and against legalizing the sale of rhino horns, as well as reading an article about the initial results of the legalization of domestic sale of rhino horns, do you agree that the legal sale of rhino horns will reduce poaching? Why? Why not? Explain your position and use specific reasons and examples based on additional research.”
- Allow students enough time to conduct their research and write over an extended period of time to complete their essays.

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APPENDIX I



An endangered African wild dog, *Lycaon pictus*, at Omaha's Henry Doorly Zoo and Aquarium.



A Rabbs' fringe-limbed tree frogs, *Ecnomiohyla rabborum*, at the Atlanta Botanical Gardens.



Mei Lun and Mei Huan, twin giant panda cubs, *Ailuropoda melanoleuca*, at Zoo Atlanta.



A garibaldi fish, *Hypsypops rubicunda*, at the Research Experience and Education Facility, at the University of California, Santa Barbara.



A rare Karner blue butterfly, *Lycaeides melissa samuelis*, at Toledo Zoo.

APPENDIX III

What drives the demand for rhino horns?

Should we accept that Vietnamese medicinal demand for rhino horns is traditional, and inevitable? Those who stockpile horns think so.

BY *Nicky Reeves*

Nicky Reeves is the curator of scientific & medical history collections at The Hunterian, University of Glasgow

Source:

<https://www.theguardian.com/science/the-h-word/2017/mar/03/what-drives-the-demand-for-rhino-horns>

Farming Rhinos

Some stockpiles come from rhinos who have died of natural causes, others are contraband seized at customs or confiscated from poachers, and many arise from dehorning programmes undertaken by both government and individuals. Rhino farmers in South Africa dehorn their rhinos to discourage poaching and therefore protect the endangered species, but breeding and dehorning rhinos also creates a potential cash crop. Conserved, inventoried, often micro-chipped and secured in strong rooms and safes, [rhino horns are stockpiled](#) largely because of their future market value. That future value rests on an assumption that the current high demand for rhino horn, predominantly for use in Vietnamese medicine, will continue indefinitely, and cannot be overcome or countered. That assumption itself rests in part on characterising the demand for rhino horns as “traditional.”

No one disputes that medicinal and recreational use of rhino horn, mostly in Vietnam, is directly responsible for high levels of poaching in southern African countries, which continues to threaten the species with extinction. But while it is true that rhino products are mentioned in a variety of traditional Vietnamese medicine texts, the scale of the Vietnamese market has risen hugely over the past 15 years: this demand is a modern phenomenon. Influenced in part by [rumours of a prominent senior government official being cured, sick and dying cancer sufferers and their families are directly targeted by unscrupulous vendors](#). In addition over the past decade and a half rhino horn has become, a party drug, a health supplement, and a hangover cure – a luxury product conspicuously consumed by newly wealthy elites.

It is often argued that (as with other high-demand products such as narcotics) regulation rather than prohibition is the best solution, and one that will best safeguard animal and human welfare, and habitat. This argument rests on an assumption that the Vietnamese market is far more culturally established than it in fact is. The contemporary medicinal consumption of rhino horn is presented as a traditional practice that people are culturally committed, indeed almost obliged, to perpetuate.

Rhino horn: a modern fad?

The fact that rhino horn medicine lacks scientific or medical validity leads rather too quickly to an implication that its consumption must be “traditional” (“medieval” is another variant). However, the world is full of beliefs and practices which are irrational, superstitious, or without scientific validity, but that does not mean that they are necessarily traditional: they can be all these things and still be modern or even post-modern, perhaps high-tech, and without historical precedent.

It is often the case that promoters of a medicine or foodstuff might have an interest in giving it a historical or traditional pedigree, but such claims need to be critically assessed rather than uncritically reproduced. Believing in the restorative or curative properties of the so-called palaeo diet, for instance, is clearly a belief held by parts of our modern society, [and is a recent invention](#). It would be odd for us to claim that the palaeo diet is traditional, and it would be even more odd for us to claim that if it is traditional it will always exist: the palaeo diet is very obviously [both modern and a fad](#).

Devastating as it is to the welfare and survival of rhino species, the Vietnamese market for rhino horns is both faddish and reversible. Education and marketing [campaigns that try to make its consumption socially unacceptable are as achievable in Vietnam](#) as campaigns were in the UK to make once popular practices like as drink-driving socially unacceptable. This has been done for rhino horns before: in the 1970s and 1980s, the Yemeni demand for rhino horn dagger handles also had a devastating effect on rhino populations in southern African countries. A mixture of legal measures and social pressure, sometimes from the highest levels of the Yemeni state, coupled with awareness campaigns about harm done to rhinos in the wild, were [fairly effective in making the practice of gifting daggers with rhino horn handles socially unacceptable](#). Whether rhino horn dagger handles were “traditional” or not, it was clearly possible to confront the practice.

There are many good arguments for both ending the stockpiling of rhino horns and for destroying current stockpiles. Given that this is not happening, we should ask who it is that has an interest in ensuring the perpetuation of a Vietnamese demand for rhino horn. Vendors, traffickers and poachers, of course, have an interest in the market continuing. A 2012 report in the Oxford Review of Economic Policy made the intriguing and worrying suggestion that [a speculator lawfully stockpiling large quantities of wildlife commodities might have an interest in “depressing” wild stock](#) in order to maximise profit: banking on extinction in the wild, in other words.

Having a monopoly on supply is one way of controlling a market, but maintaining demand is also crucial. Who is currently speculating in rhino horn stockpiles, and why? Confronting and correcting the belief that modern faddish behaviour and the peoples who engage in it are amodern, traditional, or incapable of change, would be helpful in reducing demand for rhino products, but those who farm and stockpile might have reason to present rhino horn consumption in Vietnam as a more established and

venerable practice than it in fact is.

Special Investigation: Inside the Deadly Rhino Horn Trade

Here's how a pair of South Africans could undermine the international efforts to protect the vulnerable animals.

BY BRYAN CHRISTY

This story appears in the October 2016 issue of *National Geographic* magazine.

<https://www.nationalgeographic.com/magazine/2016/10/dark-world-of-the-rhino-horn-trade/>

Editor's note, June 28, 2017: Interpol arrested Dawie Groenewald and Janneman Groenewald on June 22, 2017 in an effort to help facilitate the U.S. government's request to extradite the brothers.

It was a five-hour drive from South Africa's Kruger National Park, home of the world's largest wild rhinoceros population, to Polokwane, home of the world's most wanted man when it comes to rhino horn trafficking: a millionaire safari operator and ex-policeman named Dawie Groenewald.

To meet Groenewald, photographer Brent Stirton and I sped in two cars through gorgeous, winding mountain ranges. But then night fell, and in the darkness outside the city someone had poured tar down the center line of the highway and set it ablaze. It appeared to be another protest rooted in the racial and economic tensions that continue to flare in South Africa more than two decades after the end of apartheid. We wove around the fire only to come upon a traffic jam and a makeshift roadblock a mile later. In the middle of the road what looked like a sofa was on fire, the flames shooting 10 feet into the air. Large rocks blocked all four lanes. Brent got out of his car and moved rocks too big to drive over, while I watched for an ambush. We picked our way through the gantlet as unseen people hurled stones from beyond the shoulder.

We stayed the night at a dank roadside hotel, then waited, in accordance with Groenewald's instructions, at a gas station for his man, Leon van der Merwe, to meet us. We followed him for 20 minutes along an expanse of immaculately fenced property until we reached two stone pillars with a gate that slid open electronically. Standing in the driveway, hands on his hips, was Dawie Groenewald.

Today Groenewald, who has been called the "butcher of Prachtig" for what he allegedly did to rhinos on his hunting property of that name (prachtig is Dutch for "beautiful"), and 10 co-defendants face 1,872 counts in a South African indictment. The "Groenewald Gang," as South Africa's press has dubbed them, are charged variously with illegally killing rhinos, illegally dehorning rhinos, trading in rhino horn, racketeering, money laundering, and related crimes. In the United States, Groenewald and his brother, Janneman, have been indicted for tricking nearly a dozen American hunting clients into illegally killing rhinos at Prachtig, and U.S. authorities have requested their extradition. In the Czech Republic investigators linked Groenewald to a rhino horn-trafficking syndicate

after discovering that horns shipped to Vietnam came from rhinos shot by Czech hunters at Prachtig. Groenewald denies knowing the purpose of these hunts. He was once banned from hunting in Zimbabwe and has been expelled from the Professional Hunters' Association of South Africa.

This is the story of Dawie Groenewald, an accused rhino horn trafficker, and John Hume, the owner of the world's largest rhino farm—two men who know each other well and share a common goal: to end the South African and international bans on trading and selling rhino horn. Groenewald has agreed to see Brent and me at a time when he is in a high-stakes legal battle that could land him in prison for decades or create an opening for the legal sale of rhino horn in South Africa—an opening that could help pave the way to a legal global trade, which opponents say could doom rhinos.

The Rhino Crisis

South Africa is home to nearly 70 percent of the 29,500 rhinos left on Earth, down from several hundred thousand in Africa before the 1800s, when the European imprint on the land intensified. They're spread across two continents and five species: the white rhino, with some 20,400 remaining; the black, with 5,250; the greater one-horned; the Sumatran; and the Javan. According to South Africa's Private Rhino Owners Association, 6,200 of the country's rhinos are in private hands and are used commercially for photographic safaris, legal hunting, horn production, and breeding.

The horn of a rhinoceros is the world's most valuable appendage in an exotic marketplace that values nature's oddities, such as elephant ivory, tiger penis, and giraffe tail. Unlike the horns of many species, including cattle, rhino horn is not made of bone. It is made of keratin, a protein also found in our hair and fingernails, and if you trim a rhino's horn, it grows back. Although selling rhino horn is illegal, in South Africa if you have a permit, you can cut off a rhino's horn. Every year or two South African rhino farmers tranquilize their animals with darts, cut as much as four pounds of horn from each rhino, and store it all in bank vaults and other secure locations, hoping for a day when it's legal to sell horn.

Meanwhile a booming illegal trade supplies mostly Vietnam and China, where rhino horn is often ground to a powder and ingested as a treatment for everything from cancer to sea snake bites and hangovers. Inspired by years of erroneous reporting by Western media, people have recently also been using rhino horn as an aphrodisiac. On the black market in South Africa, the horn of the white rhino sells for up to \$3,000 a pound, according to Groenewald, but on Asian black markets it wholesales for five to 10 times that, and retail prices can go up astronomically from there. A single bull rhino carrying 22 pounds of horn might buy a new life for a Mozambican poacher who slips over the border into Kruger National Park with an AK-47, but that poacher himself is likely to be exploited by the men who supplied his weapon. That poacher also may be shot by authorities, as were 500 Mozambican poachers in Kruger from 2010 to 2015.

Tracing the Horn Trade

The international sale of rhino horn—a popular yet ineffective medicine and hangover cure in Vietnam and China—has been banned since 1977. Soaring demand in these

countries, where it's considered a status symbol, caused a rapid rise in prices. As law enforcement battles the trade, increasingly organized traffickers nimbly shift their supply routes of poached or stolen horn.

Rhino poaching has reached disastrous proportions during the past decade. In 2007 South Africa reported losing just 13 rhinos. In 2008 it was 83. Last year it was 1,175. In Kruger, home to some 9,000 rhinos, poachers kill on average two to three every day. The killing isn't limited to Africa. In April poachers shot a greater one-horned rhino with AK-47s in India's Kaziranga National Park hours after the Duke and Duchess of Cambridge had visited the park to promote conservation. Rhinos don't roar when they're injured. They keen. A shot mother will cry in pain, sometimes inadvertently causing her frightened baby to return to her. Poachers will sever a baby's spine with a machete to save a bullet, then take its horn too.

For those on the front line, protecting rhinos is no longer a conservation challenge: "It's a war," says Xolani Nicholas Funda, chief ranger at Kruger, where most of the world's rhino poaching takes place. "That's our frustration. The rhino war—it's like drugs. It involves lots of cash and bribery. The whole justice system is really a frustration. We're losing cases" in court. "We're surrounded by police stations we don't even recognize as police stations because they're working with the poachers."

Battle in Johannesburg

In 1977 the international trade in rhino horn was banned by parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the treaty governing the global wildlife trade. But the ban applies only to trade between countries, and it has an exception that horn traffickers have turned to their advantage: Under CITES it is legal to export the horn—or trophy—from a white rhino shot with a permit on a sport hunt. Beginning in 2003 Vietnamese rhino horn traffickers began signing up with South African hunting outfitters to kill rhinos for their horns, and later a Laos-based syndicate even hired prostitutes to act as pseudo hunters. These syndicates were selling horn on the black market back home.

In response to the rapacious hunting, South Africa tightened its hunting rules, limiting hunters to one rhino a year, requiring a government official to witness hunts, and denying permits to hunters from Vietnam. The horn of every hunted rhino had to be microchipped and its DNA signature recorded in the Rhino DNA Index System at the University of Pretoria's Veterinary Genetics Laboratory.

Despite all that, rhino horn trafficking continued. There was another soft spot in the international rhino horn ban that CITES couldn't address: Selling rhino horn within South Africa was legal. But then in 2008 Marthinus van Schalkwyk, minister of environmental affairs and tourism, announced a moratorium on that policy in order "to curb the increase in the illegal trade in rhino horns" and "hopefully discourage poaching." In February 2009 the ban on domestic sales of rhino horn went into effect. Groenewald has a simple explanation as to why South Africa refuses to legalize rhino horn sales: "Somewhere along in the government," he tells me, "there must be high rollers involved in this. You understand what I'm saying?"

Both Groenewald and John Hume say breeding rhinos for the purpose of harvesting and then legally selling their horns will reduce poaching. But Allison Thomson, director of Outraged South African Citizens Against Poaching, a leading anti-legalization organization, disagrees. “Our law enforcement agencies are already hard-pressed to deal with nearly a thousand arrests in 2015 and a mere 61 convictions. Added pressure to monitor a legal trade would undoubtedly make enforcement near impossible, allowing criminal syndicates once more to traffic more horns into the illegal international market.”

The controversy over rhino horn is coming to a head just as South Africa is hosting the triennial meeting of CITES in Johannesburg in September. In 1997 South Africa had proposed lifting the CITES ban on the international rhino horn trade, touting its legal system as up to the task of ensuring a controlled trade that “will depress black market prices and activity.” But that effort failed.

History has shown that removing a trade ban without adequate controls on crime and corruption can be disastrous. In 2007 CITES parties suspended an international ban on trading elephant ivory and authorized four countries—Botswana, Namibia, South Africa, and Zimbabwe—to sell 115 tons to China and Japan. The sale, which took place the next year, was designed to flood Asia’s ivory markets and drive out illegal traders. Instead it signaled that ivory markets were open again, fueling unprecedented elephant poaching across Africa—more than 30,000 elephants a year between 2010 and 2012 alone—that continues today.

There has been speculation that South Africa, with a nudge from its ranching industry, might again propose removing the CITES ban on the international rhino horn trade—despite the awkwardness of the meeting’s host country proposing such a controversial plan. “We have done all in our power [to stop poaching], and doing the same thing every day isn’t working,” South Africa’s environmental affairs minister, Edna Molewa, told the *Mail & Guardian* during the CITES meeting in Bangkok in 2013. Instead South Africa announced in May that it would not propose lifting the ban, citing the need for evidence that trade would help free-roaming rhinos, expand rhino ranges, and address corruption and challenges in other range states. But then Swaziland, a tiny country with fewer than a hundred rhinos that is locked almost entirely within South Africa, put forward a proposal to lift the ban.

THE LAST RHINOS

Dawie Groenewald ushers us to a long dining table in front of an enormous stone fireplace in the main lodge of his exotic game-breeding ranch. Called Mataka, this is the smaller of his two properties—1,853 acres and 125 miles south of Prachtig. Outside he has two shiny helicopters, a stable of Arabian horses, and acres of high-priced, exotic game he’s going to show me later, including rhinos. Inside are two great rooms filled with black leather sofas and taxidermy.

He sits down at the table, and his servant, Andrew, brings him a plate of lamb knuckles—skop, he explains, making a chopping motion with his left hand at his right forearm. Brent and I opt for a bowl of dried beef called biltong and a couple of Cokes.

Groenewald started Mataka in 2012, two years after his arrest, but he didn't end hunting operations at Prachtig. He established a new business, Wild Africa Hunting Safaris, that replaced the original one, Out of Africa Adventurous Safaris. "I had [an American] politician two years ago; he doesn't even know it's my place," he says with obvious delight. Groenewald is clearly confident of his chances in court in South Africa and the U.S. And he has reason to be: The criminal case against him in South Africa has been frozen by a civil lawsuit filed by a game farmer named Johan Krüger, who lives nearby. The lawsuit challenges as unconstitutional South Africa's ban on the trade of rhino horn, as well as most of the other rhino-related crimes that Groenewald is accused of.

"Johan Krüger," Groenewald tells me, is "on the papers." But Krüger, who is not implicated in any crimes Groenewald is charged with, is not the true plaintiff, Groenewald says, and is not the one paying the legal bills. "It's me," he adds emphatically. Krüger did not respond to *National Geographic's* efforts to contact him, but there is reason to believe Groenewald. He and Krüger have been in the buffalo business together; they hunt together; Krüger's photograph has appeared in Groenewald's hunting brochures; and Krüger's lawyer is also Groenewald's lawyer.

DAWIE GROENEWALD

The charges against Groenewald in South Africa are rooted in a September 2010 raid on Prachtig by South Africa's Directorate for Priority Crime Investigation, an elite police unit known as the Hawks. Markus Hofmeyr, manager of veterinary services for South African National Parks, which runs Kruger National Park, was part of a team of forensic specialists brought in that day to tranquilize Groenewald's rhinos and collect tissue and blood samples. His team located 29 live rhinos and darted 26 of them.

Hofmeyr submitted a sworn affidavit that described what he saw at Prachtig: "All the rhino we darted had their horns removed previously, some right down to the growing point. The horns on some rhino were clearly cut off with a chain saw or the likes." Cutting a horn too close to its growing point can cause bleeding and, veterinarians say, can be painful. Hofmeyr speculated that some horns had been removed "by inserting a knife and separating the attachment area of the horn from the base of the skull or applying a large force and tearing the horn from the base."

According to Groenewald, the Chinese "don't like dehorned pieces," so he cuts his rhinos' horns down to just three inches from the skull.

Investigators also discovered several locations at Prachtig with the remains of burned rhino carcasses and skulls. Nineteen skulls were found, all with their horns cut off. Six years later Hofmeyr is still haunted by the scene. "The thing that was most traumatic for me was seeing that pit with the dead rhinos in it," he tells me. "It's very likely he's going to get off the hook. That's an indictment of how sick our systems are."

Hofmeyr is sick about something more personal. He recognized rhinos on Groenewald's property as animals he'd helped capture in Kruger National Park. "[Groenewald] offered the best prices and there was no [criminal] conviction, so according to our tender laws

we couldn't not sell to him." Selling wildlife to the private sector is one way the park has paid for special conservation projects, he says, and even though some rhinos are sold to safari outfitters to be hunted, they also have a chance to breed, increasing numbers overall. Indeed, breeding for big game hunting is widely credited with helping white rhinos come back from near extinction at the turn of the 20th century.

"It takes a long time to recover, takes a long time to trust people again," Hofmeyr says. "You think, Am I a part of this? I caught that animal, and I put it in that box." Hofmeyr focuses on the bigger picture—animals he's helped relocate to other destinations. "I would say 75 percent of them are still alive, and breeding. That, to me, ultimately is what makes it easier to accept these things."

Groenewald, who bought over 30 rhinos from Kruger, says the park charged him by the length of each adult bull's horn. "They wanted people to hunt them," he tells me.

Of the rhinos that wound up dead at Prachtig, Groenewald sold 39 carcasses to a local butcher.

He is clear about who is buying South Africa's rhino horns. With two index fingers he pulls back the corners of his eyes and says, "The people called me all the time. Because they want some horn. Some horn. Some horn. They don't get it from me? They'll get it from somebody else."

"Chinese guys or Vietnamese guys?" Brent asks.

"Both," Groenewald says. "If their eyes are like this, they in it."

Hubbard knew Groenewald. Hubbard had assisted in his arrest for shipping a stuffed leopard to the U.S. that had been shot in South Africa without a hunting permit. Groenewald's client, a plumber from Texas named Glenn Davey, had killed the leopard in 2006. But Groenewald hadn't had a leopard-hunting permit for that year, and according to his plea agreement his name appeared on a 2008 permit application instead. FWS agents arrested Groenewald in January 2010, when he happened to be visiting his brother, Janneman, who ran their hunting company's U.S. sales operations from Autaugaville, Alabama. (Janneman has since returned to South Africa.) Groenewald pleaded guilty, was sentenced to time served (eight days), was ordered to refund his client \$7,500, and was fined \$30,000.

"How can they charge me for a leopard that was shot on my place?" Groenewald says, still seething. "I didn't steal it. I didn't shoot it on another guy's farm. It's mine."

The leopard was killed legally in 2008, he tells me, even though on page 13 of his 2006-07 company brochure there is a photograph of the Texas plumber holding the very same leopard.

Five years later, in 2011, Hubbard believed Groenewald was trafficking in wildlife again. Nearly a dozen American men who had gone on hunting adventures with Groenewald's

company told Hubbard a similar story: They hadn't intended to hunt rhinos, but on their arrival at Prachtig, Groenewald had told them about a "problem" rhino that needed to be put down. Groenewald charged them an average of \$10,000—a fraction of the going rate for a legal rhino hunt. The Americans were allowed to photograph their kills, but rhino photos were all they were allowed to take home. Groenewald kept the horns.

Hubbard opened his own case, Operation Preposterous, which was rolled into Operation Crash (a group of rhinos is a crash), a multistate rhino horn—trafficking investigation launched by the FWS in 2011. Still active, Operation Crash is one of the agency's most successful investigations, connecting antique dealers, auction houses, a gang of Irish thieves known as the Rathkeale Rovers, a former associate in Pablo Escobar's Medellín cartel, and others to rhino horn trafficking in the U.S., Europe, Asia, and Africa. As of July 2016, Operation Crash had resulted in the conviction of 30 people, 405 months of prison time, and \$75 million in seized property.

Unlike most targets of Operation Crash, who trafficked old or antique horn, the Groenewald brothers are accused of killing rhinos. The U.S. Department of Justice charged the brothers with conducting 11 rhino hunts illegal under South African law, in violation of the U.S. Lacey Act, which makes it a crime to violate any U.S. or foreign conservation law. On April 4, 2015, the department contacted South African authorities requesting their extradition. "Getting them extradited back to the U.S. is a high priority for the U.S. Fish and Wildlife Service," Chief Woody says.

But Groenewald appears to have stalled the Americans' case against him too. "At first we had great cooperation from South Africa," Hubbard says, recalling early communications with South African prosecutors to prepare for extradition. Then, he says, for some reason official communication between the South African government and the U.S. Department of Justice slowed. Among the reasons for delay, Hubbard speculates, is the Krüger lawsuit. (Citing "matters pending in court," South Africa's National Prosecuting Authority declined National Geographic's request for an interview.) The lawsuit also appears to have stalled the prosecution of Groenewald's longtime associate Hugo Ras, a luxury safari operator and accused rhino killer, whose hunting clients have included Eric Trump and Donald Trump, Jr., sons of U.S. presidential candidate Donald Trump. Ras is accused of heading a 10-person rhino-poaching and horn-trafficking syndicate that killed rhinos using dart guns and lethal levels of etorphine hydrochloride, also known as M99, a regulated opioid that is up to 80,000 times more powerful than morphine.

'Buffalo Is My Animal'

I climb into Groenewald's shining Toyota Hilux 4x4 pickup truck, with its bank of modified halogen headlights and luxury padded seat in the bed for viewing wildlife, and we go for a tour of his breeding estate.

South African game ranchers breed most anything a safari client will pay to hunt. In 2013 a buffalo named Mystery was sold to an investor group led by Johann Rupert, who controls the world's second largest luxury-goods conglomerate, Compagnie Financière Richemont SA, for a record \$4.1 million. In 2014 Deputy President Cyril Ramaphosa sold three white-flanked impalas as breeding stock for \$2.5 million, and this year an investor

paid \$2.8 million for a quarter share in a buffalo named Horizon, putting its value at \$11.2 million.

Groenewald raises buffalo, impalas, rhinos, sable antelope, and wildebeests, along with Arabian horses. His antelope live with white PVC pipes on the tips of their massive, elegantly curved horns to protect them for market. He also breeds designer animals—highly desired genetic variants such as golden wildebeests, saddleback impalas, and black impalas—animals carrying recessive genes that result in unusual colors. It's a practice that puts wild populations at risk, according to the African Professional Hunters Association, which considers "color-variant hunting" unethical.

The buffalo is among the most dangerous mammals in Africa, but Groenewald drives his truck easily among his. "Buffalo is my animal," he says fondly. He clicks a button and another fence gate slides open. We approach a group of trophy-size bulls. "This one here is worth about six million rand"—\$400,000. Another is worth \$675,000. Instead of charging, the big males scamper about like happy sheep.

Groenewald's focus on the animals' worth was a reminder of what had taken me so long to understand: To Groenewald and many other South Africans, you're not a poacher if you kill what's yours. This idea is rooted in the country's pro-game ranching laws, which make wildlife the property of anyone who can fence it off. "Everybody knows I'm not a poacher," Groenewald tells me. "I believe that an animal like a rhino should be mine. I can do with that what I want, like any other animal—like a kudu or a buffalo. If I buy that animal, it belongs to me. If you want to shoot the rhino, it's my rhino; it's on my farm. If I want you to shoot it, you can shoot it."

For Groenewald what is legal comes down to a single question: When is a rhino mine?

The Rhino King

John Hume owns more rhinos than anyone in the world. He's been breeding them since 1995, and today he has 1,300. An unlucky number, he tells me, as he takes a seat at his desk in the home office of his rhino ranch in Klerksdorp, a hundred miles southwest of Johannesburg. He'd like at least one more for luck, and he's checking his computer to see if he's had another birth.

I've heard you quoted as saying you'd buy rhinos from the devil if it would save them, I tell him.

"Well, if you look at my rhino lists, you'll see we have plenty of DGs," he replies.

"Probably over a hundred rhino here come from Dawie Groenewald. I don't deny that. I have nothing to hide, and a lot of those rhino would have been dead today." (Hume has not been implicated in any of Groenewald's alleged crimes.)

Hume owns about a fifth of South Africa's privately held rhinos. Part of what makes the rhino special, Hume says, is that it is so "user friendly." This is a cattle ranch, he says. "You couldn't keep elephants here." Each week his staff tranquilizes 10 to 15 rhinos, assists them as they stumble around, trims their horns, gives them reviving shots, and

sends the horns by armed guard to a secure facility. His rhinos each produce up to 4.4 pounds of horn a year, and the horns are cut every 20 months or so. He's been doing this for years and estimates he's amassed five tons of horn, which he hopes one day to sell legally for more than \$4,500 a pound: about \$45 million.

Although selling rhino horn is illegal, making money off live rhinos isn't, and Hume has been working to export live rhinos to Vietnam. Last fall he entered negotiations to sell up to a hundred rhinos to a company in Vietnam called Vinpearl, owned by Pham Nhat Vuong, Vietnam's wealthiest man. It's legal for a South African to export live rhinos with government approval, but it's unclear what kind of life the rhinos would be headed to. According to Hume's farm manager, wild rhinos each need nearly a thousand acres, but Hume has a captive-breeding permit allowing him to keep one rhino per 7.5 acres as long as he provides them with supplementary food. Vinpearl's safari park, part of its five-star resort on Phu Quoc Island in the Gulf of Thailand, had allocated a fraction of that to a massive rhino-breeding operation.

On December 7, 2015, a representative from Vinpearl, accompanied by the Vietnamese ambassador to South Africa, met with South African authorities to urge approval of Hume's export application. In a letter, the Department of Rural, Environmental and Agricultural Development for South Africa's North West Province stated: "Vinpearl intends to import at least 100 rhino, which will be kept on an enclosure of 15 hectares [37 acres]. Vinpearl aims to have the largest number of rhino in the world in a safari park/zoo, and wants to breed rhino." The government denied Hume's application.

Seven months earlier Hume had taken his own initiative to get the 2009 domestic ban on rhino horn trading lifted when he joined Johan Krüger's lawsuit as a co-plaintiff—the same lawsuit Groenewald claims is secretly his. Hume relied on a simple technicality to make his case: The government, he said, had failed to adequately notify the public before implementing the ban, because it had failed to consult the world's top rhino rancher—him—before it enacted its moratorium.

Hume's case was heard on September 22, 2015, World Rhino Day. He won—good news for Groenewald—and the ruling has been upheld through two appeals. The government has filed a final appeal, and the ban remains in force pending the outcome.

Meanwhile Groenewald and Hume are both preparing to sell rhino horn. Groenewald tells me that shortly after the win in court last year, he brought a group of eight Asian men to inspect Hume's rhino horn stockpile. "It's like you take kids, five or six years old, and you put them in a Toys 'R' Us," Groenewald says.

But lifting the domestic ban is only half the rhino bosses' battle. Because there's virtually no market for rhino horn in South Africa, they need the international ban to be lifted too. And that's unlikely, since neither Vietnam nor China has indicated formal interest in legalizing the rhino horn trade. Hume's lawyer, Izak du Toit, tells me that in extreme circumstances law-abiding people may feel that they have no option other than to break the law as an act of civil disobedience. Private rhino ranchers, who are forbidden to sell their horn and whose staff and animals are under threat from poachers,

may choose to trade their horn anyway. He draws a comparison to apartheid: "Black people had to transgress the very law they objected to in order to show it was illegal."

"Who cares what they do with it?" Groenewald says. "If they want to take it illegally out of the country, it's their problem."

Hume isn't bothered that rhino horn is snake oil when it comes to treating serious maladies. "I'm not ashamed that the rhino horn I make available to the world could possibly be ingested by somebody who's got cancer and he dies anyway. It's not going to help them. I have arthritis. I take at least six bloody remedies. And as far as I can see, none of them work."

What has worked so far, for Dawie Groenewald, is South Africa's legal system. When it comes to rhino horn, he hopes it works just a little bit more. "If they legalize it, I'm going to be the main man selling it."

CAN YOU SAVE RHINOS BY SELLING THEIR HORNS?

BY [Jani Actman](#)

This article was published August 20, 2017 on [NationalGeographic.com](#)

Update, August 26, 2017: The online auction ended on August 25. "The auction yielded fewer sales and fewer bidders than anticipated, but the legal domestic trade has now been established and the road has been paved for future sales," Hume's lawyer, Izak Du Toit, wrote in a statement. Prices and names of bidders have not been released.

Update, August 21, 2017: The online auction has been delayed until August 23.

About 1,500 rhinos roam John Hume's ranch in South Africa's Klerksdorp, located a hundred miles from Johannesburg. Every 20 months or so Hume, who breeds more rhinos than anyone in the world, tranquilizes the animals and dehornes them. He does this to ward off poachers and for the potential to one day cash in on his more than six-ton stockpile.

That day has finally come.

On Monday, Hume plans to hold an online auction to sell 264 rhino horns to South African residents.

A moratorium on buying and selling rhino horn within South Africa has been in place since 2009, but in 2015 Hume and another rhino horn breeder filed suit to overturn it. A final court ruling in April opened the way for the domestic trade to begin again, though the ban on the international trade, established in 1977, remains in place.

South Africa's Department of Environmental Affairs requires anyone who wants to buy or sell rhino horn to apply for a permit. Hume won a last-minute court bid on Sunday to receive his, according to tweets by South African journalists who were in the courtroom.

The stated goal of the three-day web auction is to prevent rhinos from being "poached for their horns in South Africa and to raise money to further fund the breeding and protection of rhinos," as noted by the website that will host the auction, overseen by Pretoria-based Van's Auctioneers.

South Africa is home to 70 percent of the world's remaining 29,500 white rhinos, but it's in the midst of a poaching crisis. Last year poachers slaughtered more than 1,050 rhinos in the country, up from 13 in 2007. They're capitalizing on the demand for rhino horn, smuggled mostly to China and Vietnam, where it's carved into tchotchkes and art and sold for use in folk medicine. (Rhino horns are made of keratin, the same protein found in human hair and fingernails, and there's little evidence that they have curative value for anything).

Hume spends \$170,000 a month on security for his rhinos, the auction website says, plus additional costs for rhino feed and veterinary services. Part of his expenditures go toward trimming their horns.

The concept of selling horn in South Africa has stirred controversy, with most conservation groups opposed to the idea. Critics emphasize that there's almost no domestic market for rhino horn in South Africa and worry that any horn sold domestically will be trafficked out of the country.

"It's difficult to see how a domestic rhino horn auction will do anything other than send confusing signals to the rest of the world," says Ross Harvey, an economist and senior researcher with the South African Institute of International Affairs. "If South Africa's domestic market is just about non-existent, one has to ask questions about who the buyers at this auction would sell their horns to."

Opponents are especially concerned about Hume's auction because it has Vietnamese and Chinese language homepages in addition to one in English. "Clearly Mr. Hume has a broader market in mind, and this calls into question his motive, in my mind, to sell horn," wrote Joseph Okori, head of the South Africa regional office for the International Fund for Animal Welfare, [in a post](#) on the NGO's website.

Opposition to the auction is so strong that hackers even took down the website last week. "Your lack of common compassion for animals is outrageous and has been dealt with properly," read a statement on the hacked website, which has since been restored. A group called the National Frog Agency/Central Frog Services, which has the twitter handle [@NFAGov](#), claimed responsibility for the cyber-attack.

But Hume, on the auction website, claims that a legal trade in rhino horns will provide competition for the illegal trade and drive down the price of horn, which can fetch \$3,000 a pound on the black market in South Africa. The auction, however, will have no set opening price, Johan Van Eyk, of Van's Auctioneers, told *Agence France-Presse*, [according to](#) Phys.org.

"We will have to look at what people are willing to pay and that will give us an idea of

the price on the legal market,” he said. The 264 horns he’s putting up for sale could weigh as much as 1,100 pounds.

The South African government insists that protections are in place to prevent horns from leaking onto the black market. “The department places value on the need to monitor the movement of the horns, and for this reason systems are in place to enable us to do that,” [reads a statement](#) issued on August 17 by Edna Molewa, environmental affairs minister.

She pointed to the permitting system, marking requirements, a national database for rhino horn, and a required DNA profile of each horn as examples of how the government will keep track of the horns.

Hume also has plans for a physical auction of rhino horn in September.

Special Thanks to the Following Research Sources

National Geographic Magazine

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National Geographic Photo Ark

Smithsonian Magazine

The Guardian

The US Fish & Wildlife Service

Additional Educational Resources on Annenberg Learner's Website

AnnenbergLearner.org

Conservation

The Habitable Planet, unit 9, Biodiversity Decline <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/biodiversity-decline/>

Habitats

Essential Lens, "Earth, Climate, and Change" <https://www.learner.org/series/essential-lens-analyzing-photographs-across-the-curriculum/earth-climate-and-change-observing-human-impact/>

Essential Science for Teachers, Life Science (K-6), session 7, "Energy Flow in Communities" <https://www.learner.org/series/essential-science-for-teachers-life-science/energy-flow-in-communities/>

Ecosystems

The Habitable Planet, unit 4, Ecosystems <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/ecosystems/>

Essential Science for Teachers, Life Science (K-6), session 8, "Material Cycles in Ecosystems" <https://www.learner.org/series/essential-science-for-teachers-life-science/material-cycles-in-ecosystems/>

Biodiversity

Rediscovering Biology, unit 12, Biodiversity <https://www.learner.org/series/rediscovering-biology-molecular-to-global-perspectives/biodiversity/>

The Habitable Planet, unit 9, Biodiversity Decline <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/biodiversity-decline/>

Essential Science for Teachers, Life Science (K-6), session 6, "Evolution and the Tree of Life" <https://www.learner.org/series/essential-science-for-teachers-life-science/evolution-and-the-tree-of-life/>

Extinction

Rediscovering Biology, unit 12, Biodiversity <https://www.learner.org/series/>

[rediscovering-biology-molecular-to-global-perspectives/biodiversity/](https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/ecosystems/)

The Habitable Planet, unit 4, Ecosystems <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/ecosystems/>

Animals around the world

Journey North <https://journeynorth.org/>

Explore.org