# **NATIONAL GEOGRAPHIC**

A Pessimist's Guide to Life on Earth in 2070

# ICOM SAUE HOUSE Subsection of the second sec

An Optimist's Guide to Life on Earth in 2070

# Long live our national parks.

For years, Subaru owners have found adventure in our national parks. That is why Subaru is the National Park Foundation's largest corporate supporter, providing nearly \$20 million to preserve the adventure that brings us together for generations to come. We do it because it's the right thing to do.

Subaru is a registered trademark. Vehicle shown with accessory equipment.



It's what makes us more than a car company.



#### EARTH DAY 2070

# WHAT LIES AHEAD For the planet?

#### BY SUSAN GOLDBERG

**THE SAYING IS SO WELL KNOWN** that most of us can finish the sentence: *Those who cannot remember the past*...

... are condemned to repeat it.

It's a fitting reminder this month as we mark the 50th anniversary of Earth Day. For the occasion, we've created the first ever "flip" issue of *National Geographic*—essentially two magazines in one—to revisit environmental milestones of the past half century and to look ahead at the world our descendants will inhabit in 2070, on Earth Day's 100th anniversary.

Two scenarios emerge.

On the magazine cover just before this page, there's a verdant Earth. Welcome to the optimistic view of writer Emma Marris, who sees a world that is changed—we cannot undo some damage we have done—but one in which technologies will be harnessed to "feed a larger population, provide energy for all, begin to reverse climate change, and prevent most extinctions," Marris writes. "The public desire for action is bursting forth on the streets ... Just as in 1970, the electric crackle of cultural change is once again in the air. I believe we will build a good 2070."

Next, turn the magazine over, to the side with the browner Earth. Elizabeth Kolbert looks to a new normal of "sunny-day flooding," when high tide will send water gushing across lowlying U.S. coastal cities, and most atolls will be uninhabitable. This is the world of longer droughts, deadlier heat waves, fiercer storms, and more. "I could go on and on listing the



dangerous impacts of climate change," Kolbert writes, "but then you might stop reading." She sees no evidence that we will address those and other threats fast enough to keep them from overwhelming us and the natural world.

It's impossible to know who is right. The stories in this issue reflect divergent realities. When I read about the young people taking charge of the environmental movement, I feel buoyed. Then I see Pete Muller's photos of a scarred landscape we will never get back. What I do know is that it is our job to provide a factual framework for what is happening, documentary photography about what is forever changed and what we can save, and information to help empower all of us to make a difference.

Thank you for reading *National Geographic*. □



### WILDLIFE AS CANON SEES IT

All together now. The Snares penguin is so in tune with its breeding colony-typically 50 to 500 pairs, but occasionally over 1,000-that its nesting patterns are synchronized to within a week. The same pairs reunite at the same breeding sites every year, with the female laying two eggs and only the stronger chick generally surviving. But today's young are being

brought into an increasingly hostile world, with perils ranging from oil spills to the reduction of prey due to commercial fishing and ocean warming.

As Canon sees it, images have the power to raise awareness of the threats facing endangered species and the natural environment, helping us make the world a better place.





EOS System

#### $\nabla$

SINCE OUR FOUNDING IN **1888. NATIONAL GEOGRAPHIC** HAS BEEN WORKING TO **CONSERVE THE PLANET** AND ITS INHABITANTS. THIS MONTH, ALONG WITH THE WALT DISNEY COMPANY (THE MAJORITY OWNER **OF NATIONAL GEOGRAPHIC** PARTNERS), WE'RE **CELEBRATING EARTH DAY'S 50TH ANNIVERSARY WITH** MULTIMEDIA STORYTELLING AND EVENTS, AS WELL AS SPECIAL PROGRAMMING **ON NATIONAL GEOGRAPHIC, ABC, AND DISNEY+.** 

#### CALL TO ACTION

#### **#NatGeoSaveTogether Help protect wildlife** Join National

Geographic and Disney as we focus on saving 50 of the planet's at-risk species. Find out how you can help, beginning April 1 at nationalgeographic.com.

#### LIVE TV SPECIAL

#### Born Wild and ready to explore How better to appreciate Mother Earth than by meeting her offspring? A live celebration of animal babies, Born Wild: Earth Day Live airs April 22 at 8/7c on National Geographic and Nat Geo WILD.

#### NAT GEO TV

#### Take inspiration from Jane: The Hope Join Jane Goodall as

she travels the world, calling us all to activism on behalf of wildlife and the planet. Jane Goodall: The Hope premieres April 22 at 9/8c on National Geographic and Nat Geo WILD.



#### NAT GEO KIDS

Show children how to 'Save the Animals' For Earth Day, Nat Geo Kids magazine explains how people saved once threatened species, then shows young readers how they can help. Find more articles, photos, and a quiz at natgeokids.com.

#### ANIMAL KINGDOM Celebrate Earth Day at a theme park

Nat Geo explorers share their stories at Disney's Animal Kingdom April 18-22. Among them: photographer Joel Sartore, whose Photo Ark project raises awareness of animal extinction.

#### NAT GEO LIVE

Explore big cats with our photographer

Attend Nat Geo Live events, coming to a venue near you. This month, track tigers, jaguars, and more with veteran photographer Steve Winter. Find an event at nationalgeographic.com/events.

#### NAT GEO BOOKS

For Earth Day, savor U.S. national parks National Geographic's Atlas of the National Parks showcases these natural treasures through photographs, graphics, and a map of each park. The atlas is available wherever books are sold.

Subscriptions For subscriptions or changes of address, contact Customer Service at *ngmservice.com* or call 1-800-647-5463. Outside the U.S. or Canada call +1-515-237-3674.

Contributions to the National Geographic Society are tax deductible under Section 501(c)(3) of the U.S. tax code. I Copyright © 2020 National Geographic Partners, LLC I All rights reserved. National Geographic and Yellow Border: Registered Trademarks ® Marcas Registradas. National Geographic assumes no responsibility for unsolicited materials. Printed in U.S.A. I For corrections and clarifications, go to *natgeo.com/corrections*.

NATIONAL GEOGRAPHIC (ISSN 0027-9358) PUBLISHED MONTHLY BY NATIONAL GEOGRAPHIC PARTNERS, LLC, 1145 17TH ST. NW, WASHINGTON, DC 20036. \$39 PER YEAR FOR U.S. DELIVERY, \$44.00 TO CANADA, \$51.00 TO INTERNATIONAL ADDRESSES. SINGLE ISSUE: \$8.00 U.S. DELIVERY, \$10.00 CANADA, \$15.00 INTERNATIONAL. (ALL PRICES IN U.S. FUNDS; INCLUDES SHIPPING AND HANDLING.) PERIODICALS POSTAGE PAID AT WASHINGTON, DC, AND ADDITIONAL MAILING OFFICES. POSTMASTER: SEND ADDRESS CHANGES TO NATIONAL GEOGRAPHIC, PO BOX 37545, BOONE, IA 50037. IN CANADA, AGREEMENT NUMBER 100001298, RETURN UNDELIVERABLE ADDRESSES TO NATIONAL GEOGRAPHIC, PO BOX 37545, BOONE, IA 50037. IN CANADA, AGREEMENT NUMBER 100001298, RETURN UNDELIVERABLE ADDRESSES TO NATIONAL GEOGRAPHIC, PO BOX 37545, BOONE, IA 50037. IN CANADA, AGREEMENT NUMBER 100001298, RETURN UNDELIVERABLE ADDRESSES TO NATIONAL GEOGRAPHIC, PO BOX 319 STN MAIN, MARKHAM, ONTARIO L3P 929. UNITED KINGDOM NEWSSTAND PRICE £6.99. REPR. EN FRANCE: EMD FRANCE SA, BP 1029, 59011 LILLE CEDEX; TEL. 320.300.302; CPPAP 0720U89037; DIRECTEUR PUBLICATION: D. TASSINARI. DIR. RESP. ITALY: RAPP IMD SRL, VIA G. DA VELATE 11, 20162 MILANO; AUT. TRIB. MI 258 26/5/84 POSTE ITALIANE SPA; SPED. ABB. POST. DL 353/2003 (CONV L.27/02/2004 N.46) ART 1 C. 1 DCB MILANO STAMPA. QUAD/GRAPHICS, MARTINSBURG, WV 25401. SUBSCRIBERS: IF THE POSTAL SERVICE ALERTS US THAT YOUR MAGAZINE IS UNDELIVERABLE, WE HAVE NO FURTHER OBLIGATION UNLESS WE RECEIVE A CORRECTED ADDRESS WITHIN TWO YEARS.



### WHAT IF YOUR PET HAD THE ADVANTAGE OF PROBIOTICS?

At Purina<sup>®</sup> Pro Plan<sup>®</sup>, we're always looking for ways to keep advancing, improving and offering your pet our best nutrition yet. Our latest addition? **Live probiotics in select SAVOR<sup>®</sup> dry formulas to support digestive and immune health.** We've studied probiotics for decades and carefully chose one that is known for being robust and stable. This probiotic is able to survive until the food reaches your pet's bowl. In fact, we guarantee it.

AVAILABLE FOR CATS & DOGS PRO PLAN

REDDED BLEND

LEARN MORE AT ProPlan.com/Probiotics.



PURINA

RO PLAN SAVOR

Purina trademarks are owned by Société des Produits Nestlé S.A. Any other marks are property of their respective owners.

PURINA

Your Pet, Our Passion.

Exclusively at Pet Specialty and Online Retailers, Including:







PET SUPPLIES PLUS.



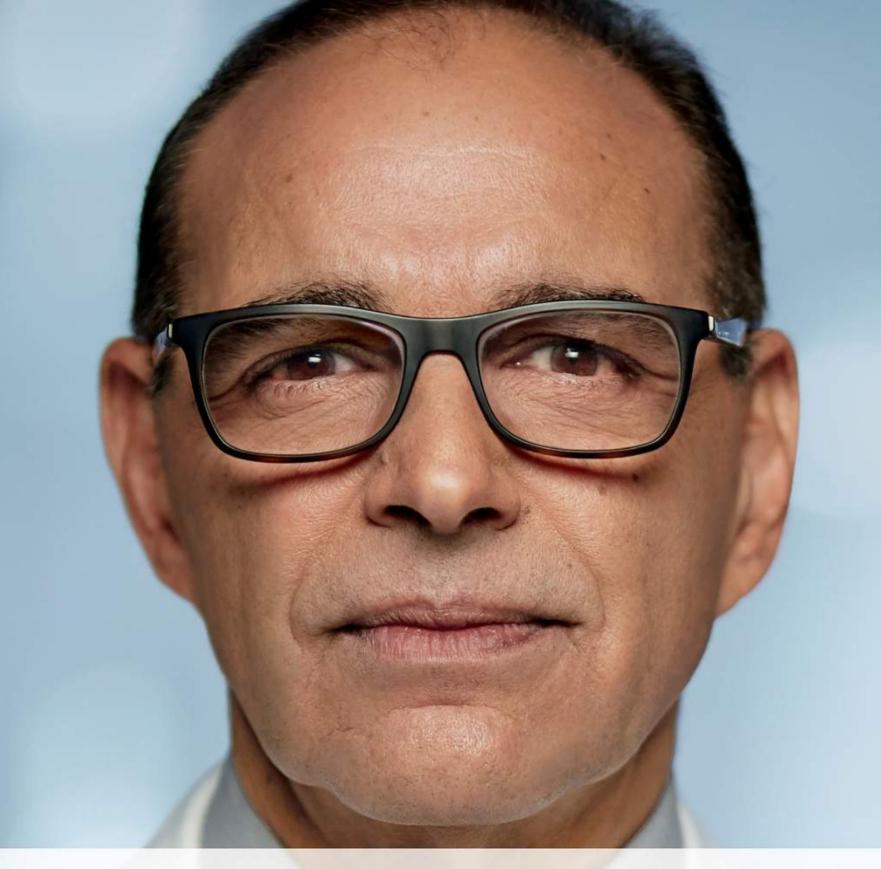
THE OPTIMIST'S GUIDE TO

FIFTY YEARS AGO WE CELEBRATED THE FIRST EARTH DAY. WHERE WILL WE BE 50 YEARS FROM NOW? OUTLOOK: BRIGHT.

 $\nabla$ 

Not feeling so optimistic? Flip the magazine for a pessimist's guide, including a look at the psychological toll of climate change.

NATIONAL GEOGRAPHIC



### "Cancer, you're no match for our expertise"

Dr. Ehab Hanna | Cancer Physician

At MD Anderson Cancer Center, our physicians see more types of cancer in a day than many will see in their whole career. This level of subspecialization gives our patients the best hope of defeating cancer – even in the most complex cases. Because at MD Anderson, nothing is rare to us. **Choose MD Anderson first. Call 1-833-361-4320 or visit MakingCancerHistory.com.** 



Ranked number one in the nation for cancer care by U.S. News & World Report.



Making Cancer History®

### THE CASE FOR Renewal

We already have the tools to feed a larger population, provide energy for all, begin to reverse climate change, and prevent most extinctions. BY EMMA MARRIS



### THE ROAD To 2070

A 4,000-mile drive across the U.S. aims to find out if we truly can wean ourselves from fossil fuels. BY CRAIG WELCH PHOTOGRAPHS BY DAVID GUTTENFELDER

## FIGHTING FOR THEIR FUTURE

Ice sheets are melting and temperatures soaring as millions of young people come of age. They're tired of waiting for leaders to act. BY LAURA PARKER



FIFTY YEAKS OF PROGRESS

In wealthy nations, the air, the water, and the land are cleaner than they were 50 years ago. The challenge: to make that true for everyone.



IMAGES OF SALVATION	8
THE COMEBACK CREATURES	30
WHAT YOU CAN DO FOR YOUR WORLD	32
CLEANER ENERGY, WATER	
NEW CHALLENGES FOR US ALL	36

#### PULLOUT POSTER

Where can preserving land and sea have the most conservation impact? We've mapped it. **ON THE COVER** An optimistic illustra-

tion of our thriving planet in 50 years.