
UNITED NATIONS DECADE ON
ECOSYSTEM
RESTORATION
2021-2030
Science
Film
Festival
REIMAGINE
RECREATE
RESTORE
#GenerationRestoration
FESTIVAL BOOKLET
01.10-20.12.2023
sciencefilmfestival.org
GOETHE
INSTITUT

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MESSAGE FROM DR MARKUS LITZ DIRECTOR, GOETHE-INSTITUT MALAYSIA

Welcome to the 13th edition of the International Science Film Festival in Malaysia. Following a successful festival last year where the festival has reached over 700,000 viewers in 20 countries in Southeast Asia, South Asia, Africa, Latin America, and the Middle East. The outcome further strengthens the festival's position as the largest scientific film festival world-wide and contributes to its recognition as one of the most effective science popularization initiatives. For Malaysia, we have reached over 11,000 viewers which is the second highest in the Southeast Asia region.

The Goethe-Institut, which is the official German cultural institute, is delighted to have the support from a fleet of dedicated festival partners: the Ministry of Education Malaysia, Association of Science, Technology and Innovation, Malaysian Nature Society, Pusat Kokurikulum Negeri Terengganu, Pusat Kokurikulum Negeri Selangor, University Malaya, Pustaka Negeri Sarawak, Komuniti Filem Titiwangsa, Haus Kch, Seni Kita, Borneo Eco Film Festival, Kota Kinabalu International Film Festival and PASCH (Schools: Partners for the Future). The festival this year is also supported by Rolls-Royce.

In 2023, the Science Film Festival is the official supporting partner of the United Nations Decade on Ecosystem Restoration. The theme is a rallying call for the protection and revival of ecosystems all around the world. The UN Decade runs from 2021 through 2030, which is also the deadline for the Sustainable Development Goals and the timeline scientists have identified as the last chance to prevent catastrophic climate change. Ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact. The UN Decade on Ecosystem Restoration is a global movement, based on a resolution by the UN General Assembly, and coordinated by the UN Environment Programme (UNEP) and the Food and Agriculture Organization (FAO).

During the festival period 01 October to 20 December 2023, the 41 films selected by the Malaysian juries are made available on VIMEO and can be accessed by all the festival partners, including the participating schools and members of the public. This year the festival is going hybrid with many planned activities for both online and physical formats. This is only possible through the coordinated efforts of all our partners.

I would like to thank all the parties and partners involved in this year's festival, all schools and universities, public or private enterprises, as well as volunteers. I hope you will enjoy the films and also the festival activities. May the Science Film Festival 2023 become another success!

MESSAGE FROM INGER ANDERSEN EXECUTIVE DIRECTOR, UN ENVIRONMENT PROGRAMME (UNEP)

Dear Science Film Festival Partners and Audiences,
Esteemed Filmmakers,

The world is in the grip of a triple planetary crisis – the crisis of climate change, of nature and biodiversity loss, and pollution and waste.

Climate-related weather events are getting more frequent and more extreme, our oceans are choking in plastic, farmlands are losing fertile soils, and one million plant and animal species are at the risk of extinction.

Yet, amongst all these crises, there is reason for hope. Because the good news is: Nature is forgiving. And given half a chance, she can recover.

One mighty weapon we have in this fight for our future is our imagination. We are in the middle of a story with an uncertain ending. And we are the ones that hold the pen. We can reimagine, recreate and restore, a brighter future. One where we go from a narrative of exploiting nature to reviving it.

I thank the Goethe-Institut and partners, as well as all our wonderful filmmakers for bringing us these stories of hope.

So lean back, keep your eyes peeled and minds open. Let's take the lessons from these selected films to heart and start working on becoming a #GenerationRestoration …aaand Action!

GREETING MESSAGE FROM DR BICKY BHANGU PRESIDENT, SOUTH EAST ASIA, PACIFIC AND SOUTH KOREA AT ROLLS-ROYCE

Over the last century, Rolls-Royce has been a driving force in the aerospace and engineering sectors globally.

Our power and propulsion solutions keep customers' engines running in the air, sea and land – from turbine engines for planes to fly, piston engines to move ships and trains, to microgrids and generators that power high-rise buildings and data centres.

Our business relies heavily on engineers and technologists to bring ideas to life and solve the world's most pressing problems.

STEM subjects don't just power our products, they power the functioning of a modern world. And amid the pressures of climate change and the necessary energy transition, we urgently need sustainable technology solutions which are rooted in science.

We believe the next generation has an important role in safeguarding the future. This is why we are committed to promoting STEM education to inspire the scientists and engineers of tomorrow, from all parts of the world.

Our partnership with the Science Film Festival aims to bring the wonders of science to young people of all backgrounds. Through exposure to these topics at an early age, we want to foster curiosity and a love of learning.

Together, we can create a bright and sustainable future.

JURY MALAYSIA

SONIA LUHONG WAN

Sonia Luhong Wan is an artist and curator. She also actively contributes to Kuching's vibrant art scene through her involvement with creative platforms HAUS KCH, Borneo Bengkel, and 9Lives.

SURESH RAMASAMY

Suresh Ramasamy is a Science and Chemistry teacher,currently teaching at SMK Medini in Iskandar Puteri, Johor. As a member of the Association of Science, Technology and Innovation (ASTI), he is involved in their programs to promote science and innovation among children throughout the schools in Malaysia. These programs include the National Science Fair for Young Children, Young Inventors Challenge and Critical and Creative Thinking Camps.

AL JAFREE MD YUSOP

Al Jafree Md Yusop began his career as a scriptwriter. He wrote the film Paloh for director Adman Salleh and the stage musical P. Ramlee The Musical for Enfiniti Production. His directing career started with Senandong Malam, a telemovie which he co-directed with Dain Said. He then directed Melur vs Rajawali and Kembara Nak Dara, both telemovies for RTM. He wrote and directed his award winning feature film Mencari Rahmat in 2017.

JURY MALAYSIA

HASHIMI BIN ISMAIL

Hashimi Bin Ismail is a marine environmental conservation activist, an active nature educator, bird photographer and a Malaysian Nature Society's Terengganu State Education Coordinator. Participates in Science Film Festival since 2014 as Malaysia Essay writing competition judge, Malaysia Pre-jury for SFF 2015 to 2017 and Malaysia representative to SFF regional and interregional workshop held by Goethe Institut Bangkok for three consecutive years (2015-2017) and acts as the SFF 2022 and SFF2023 liaison officer for Terengganu State Education Department.

DR. YEAP LENG LEE

Dr. Yap Leng Lee is a senior lecturer in German language with 20 years of experience and currently work at University of Malaya. In 2014, she was awarded the Outstanding Teacher Award by Majlis Amanah Rakyat (MARA). She was a licensed telc-Examiner from 2015-2021 and is presently licensed Ösd-Examiner as well as Chairperson of ÖSD-Malaysia. Learning German language is fun, so do science! Science is for EVERYONE regardless the field of study and SCIENCE should be imparted in each student as it is part of daily life. This knowledge is weighty as it enables students to engage actively in conversations/ discussions/ debates in German language. She wishes to inculcate science in her students and manoeuvres science as hooks in her teaching.

FESTIVAL THEME 2023: UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021 - 2030

FILM CATEGORIES

FAMILY EDUTAINMENT

ECOLOGY & ENVIRONMENT

NON VERBAL & SCIENCE SHORTS

CULTURE & HISTORY

NATURAL SCIENCE, LIFE SCIENCE & TECHNOLOGY

ANIMAL INTELLIGENCE

Synopsis / How do the snakes see the world? Why do hummingbirds love flowers? Why do frogs sing? Inteligencia Animal (Animal Intelligence) is a television series for kids about animal life, with outstanding images, questions, and fun trivia. In 13 chapters we'll get to know Latin America's wildlife and their secrets with the unique voice of the Argentine singer, Hilda Lizarazu.

CATEGORY Family Edutainment **DIRECTOR** Andres Sehinkman
PRODUCED BY Canal Pakapaka **RUNNING TIME** 9 min.
COUNTRY Argentina **YEAR** 2021 **AGE GUIDELINE** Primary School (9–11)

COW FARTS

Synopsis / This is a short film about the impact of red meat production on the environment. Children share important facts about the importance of having a nutritious diet and living a healthy life. Through exercise and healthy ways of preparing food, they say, we can improve this key aspect of our lives.

CATEGORY Family Edutainment **DIRECTOR** Irma Ávila Pietrsanta
PRODUCED BY Laboratorio de Ciudadanía Digital **RUNNING TIME** 3 min.
COUNTRY Mexico **YEAR** 2021 **AGE GUIDELINE** Primary School (9–11)

ENGINEERING CORAL RESTORATION IN THE CARIBBEAN

Synopsis / Coral seeding meets coral fragmentation – taking restoration to the next level! When growing coral to restore reefs, not only time is pressing, but also the extension of the area that needs to be enhanced. We urgently need to close the gap to scale when it comes to coral restoration. And SECORE is doing just that.The idea behind the Multi-Colony Collector is to collect from many coral colonies at once during annual spawning events, hence, the name Multi-Colony Collector. The idea is to make coral seeding – coral restoration and enhancement – more efficient and thus applicable for a large-scale implementation: fewer divers can collect more spawn. Additionally, resources such as nurseries for fragmentation or planted areas can support coral restoration, in other words, raising corals from wild-caught spawn. Together with Reef Patrol, we accompany the first pilot field test on film. Join us on a journey to Bonaire, and see how we test this innovative new device.

CATEGORY Ecology & Environment **DIRECTOR** Vanessa Cara-Kerr
PRODUCED BY Carin Jantzen **RUNNING TIME** 8 min.
COUNTRY Germany **YEAR** 2023
AGE GUIDELINE University and General Public

GLOBSTERS: WHAT ARE THESE MYSTERIOUS SEA MONSTERS FROM THE DEEP?

Synopsis / Every so often, unidentified creatures wash up on our beaches. With only 20 per cent of the ocean explored, do these mysterious bodies belong to an undiscovered species?

CATEGORY Family Edutainment **DIRECTOR** Hannah Draper
PRODUCED BY Elle Gibbons, Penny Palmer **RUNNING TIME** 6 min.
COUNTRY Australia **YEAR** 2022
AGE GUIDELINE Secondary School (12–16)

PLASTIC CHALLENGE

Synopsis / All of us can make a difference and protect the environment. In each episode of Plastic Challenge, we will invite you to know how. We will learn about the "7Rs" that we must activate to take care of our planet: Reflect, Redesign, Reduce, Reject, Reuse, Recycle and Repair. In a playful and entertaining way, we will review the plastic history, from its creation to the present, showing its contributions to humanity and also the problems that plastic has caused, due to the lack of awareness about circular economy. Besides that, we will visit Jorge Huneuus, a public school of La Pintana, where children are taught early on about caring for the environment through simple but important actions.

CATEGORY Family Edutainment **DIRECTOR** Fernando Garabedian y Daniela Liendo Fluxá **PRODUCED BY** The Circular Plastic in the Americas Program Chile (CPAP, programa de la Unión Europea), Fundación Chile, NTV
RUNNING TIME 8 min. **COUNTRY** Chile **YEAR** 2021-2022
AGE GUIDELINE Primary School (9–11)

REABSORBING CARBON

Synopsis / Vesta are a company accelerating carbon capture from natural chemical weathering. With more than 2 trillion tonnes of excess carbon dioxide in the atmosphere today, we need to accelerate efforts to capture existing CO2 as well as reduce our emissions. The oceans are one of the largest carbon sinks on the planet, absorbing up to 25 percent of the atmospheric carbon-dioxide we emit each year, and research is underway to make it even more effective - and reduce ocean acidity at the same time. Vesta is pioneering techniques to speed up the natural process of natural chemical weathering - the gradual breakdown of rocks as they come into contact with rainfall - which is a highly effective way of removing carbon from the atmosphere, but only over a very extended time-frame. This coastal carbon capture approach relies on the carbon-absorbing potential of olivine - one of the most abundant, naturally occurring minerals worldwide. By grinding olivine into a fine sand and transporting it to coastal areas where it dissolves in the sea to form a stable form of carbon called bicarbonate, Vesta is hoping to remove up to a billion tonnes of carbon dioxide from the atmosphere every year. At the same time the team is also looking into olivine's relationship with the local ecosystem, the carbon footprint involved in extracting and transporting it, and any reduction in ocean acidity - a potentially invaluable environmental benefit.

CATEGORY Ecology & Environment **DIRECTOR** Naomi Hogarty
PRODUCED BY Bracken Hollings **RUNNING TIME** 7 min.
COUNTRY United States **YEAR** 2022
AGE GUIDELINE University and General Public(9–11)

REBUILDING CORAL REEFS IN THE DOMINICAN REPUBLIC

Synopsis / This documentary focuses on the coral restoration efforts in the Dominican Republic. The coral restoration organizations Fundemar and Secore International have joint forces to give the coral reef of the Caribbean a future! Vanessa Cara-Kerr started underwater filming in 2014 and hasn't stopped ever since. Now she films under the name "Reef Patrol" and collaborates with ocean conservation organisations do help make the world a better place for coral reefs.

CATEGORY Ecology & Environment **DIRECTOR** Vanessa Cara-Kerr
PRODUCED BY Carin Jantzen **RUNNING TIME** 6 min.
COUNTRY Germany **YEAR** 2022
AGE GUIDELINE University and General Public

REDESIGNING THE WHEEL

Synopsis / Some 28% microplastic pollutant in our oceans comes from an unexpected source: tyre dust. A single car produces around 2.08g of tyre dust each day, and the microplastics this dust contains make their way into our waterways, pollute the air we breathe and contaminate our food. It is estimated that we eat around a credit card's worth of plastic per week. The Tyre Collective addresses this problem by collecting the tyre dust at source. The group of four, who met at Imperial College London during their studies, realised that the dust coming off the wheels was positively charged and so could be collected using electrostatics, and then reused to make other products; including new tyres, inks and the soles of shoes. Electric vehicles tend to be on average 25% heavier than their petrol counterparts, and therefore generate larger volumes of tyre dust, so Tyre Collective's innovative approach is a timely intervention to what has been, until now, something of an unknown problem.

CATEGORY Ecology & Environment **DIRECTOR** Bruno Centofanti
PRODUCED BY Zoe Jones & Parisa Shirvani **RUNNING TIME** 6 min.
COUNTRY United Kingdom **YEAR** 2021
AGE GUIDELINE University and General Public

REMAPPING RESTORATION

Synopsis / A mapping platform for the global restoration movement, combining ecological data with artificial intelligence. A collaboration between the Crowther Lab, ETH Zurich and Google, Restore is a mapping platform for the fast-growing global restoration movement. Traditionally, detailed scientific data and resources have been difficult or expensive to access, with information spread across a mix of outlets and platforms. Restore plans to reinvent this space by combining the latest scientific data collected from ground data points with artificial intelligence and machine learning, connecting people to scientific data, supply chains, funding, and each other, with the aim of increasing the impact, scale, and sustainability of restoration efforts around the world.

CATEGORY Family Edutainment **DIRECTOR** Daniel Hager
PRODUCED BY Zoe Jones & Parisa Shirvani
RUNNING TIME 6 min. **COUNTRY** Switzerland **YEAR** 2021
AGE GUIDELINE University and General Public

REPACKAGING NATURALLY

Synopsis / Nearly 10 billion tonnes of plastic have been produced in little more than a hundred years - with an additional half a billion tonnes being produced each year. While plastic has revolutionised the way we live, it has created oceans and mountains of waste which can't be absorbed by nature. We need to come up with alternatives to plastic packaging if we are to protect the ecosystems on which we depend. Notpla have created a home compostable alternative to plastic which is derived from seaweed, a diverse and abundant organism found all round the world. Renewable and biodegradable, seaweed cultivation doesn't compete for land with food crops, doesn't need fresh water or fertilizer and actively contributes to de-acidifying our oceans. Notpla's food packaging, edible bubbles, paper and pipettes are already being used commercially and the company was selected as the winner of Prince William's Earthshot Prize 2022, in the category of 'Build a Waste-Free World'.

CATEGORY Ecology & Environment **DIRECTOR** Frances Molesworth
PRODUCED BY Bracken Hollings **RUNNING TIME** 7 min.
COUNTRY United Kingdom **YEAR** 2021
AGE GUIDELINE University and General Public

RESTORE - BIG OCEAN STATES

Synopsis / So-called Small Island Developing States are among the most impacted by the climate crisis. The countries of St. Lucia, Comoros and Vanuatu are teaming up and turning a threat into a fresh start. They call themselves Big Ocean States. The Small Islands Developing States Ecosystem Restoration Flagship has been recognized as a World Restoration Flagship under the UN Decade on Ecosystem Restoration. These initiatives represent Earth's frontiers of hope, as countries agreed to a new Global Biodiversity Framework. Under the agreement, countries promise to protect 30% of the planet's lands and seas, and bringing back 20% from degradation.

CATEGORY Ecology &Environment **DIRECTOR** UN Decade on Ecosystem Restoration **PRODUCED BY** UN Decade on Ecosystem Restoration **RUNNING TIME** 8 min. **COUNTRY** St. Lucia, Comoros and Vanuatu **YEAR** 2023 **AGE GUIDELINE** University and General Public

RESTORE - THE CLIMATE FRONTIER

Synopsis / The Arabian Sea is among the hottest on the planet, and climate change has been driving mass die-offs of coral reefs. At the same time, scientists noticed that some species seem to be more resilient than others. This has kicked off a drive to restore coral reefs, mangrove forests and seagrass off the coast of Abu Dhabi – an important home to vulnerable species like the Dugong. Restoration of Coastal and Marine Ecosystems of Abu Dhabi has been recognized as a World Restoration Flagship under the UN Decade on Ecosystem Restoration. These initiatives represent Earth's frontiers of hope, as countries agreed to a new Global Biodiversity Framework. Under the agreement, countries promise to protect 30% of the planet's lands and seas, and bringing back 20% from degradation.

CATEGORY Ecology & Environment **DIRECTOR** UN Decade on Ecosystem Restoration **PRODUCED BY** UN Decade on Ecosystem Restoration **RUNNING TIME** 7 min. **COUNTRY** United Arab Emirates **YEAR** 2023 **AGE GUIDELINE** University and General Public

RESTORE - THE DRY CORRIDOR

Synopsis / The Central American Dry Corridor has long been suffering from droughts and floods that drive food insecurity and migration in the millions. Farmers are now rising up to the challenge. Learn how they protect what they have, and bring back what was lost. The Central American Dry Corridor has been recognized as a World Restoration Flagship under the UN Decade on Ecosystem Restoration. These initiatives represent Earth's frontiers of hope, as countries agreed to a new Global Biodiversity Framework. Under the agreement, countries promise to protect 30% of the planet's lands and seas, and bringing back 20% from degradation.

CATEGORY Ecology & Environment **DIRECTOR** UN Decade on Ecosystem Restoration **PRODUCED BY** UN Decade on Ecosystem Restoration **RUNNING TIME** 7 min. **COUNTRY** El Salvador **YEAR** 2023 **AGE GUIDELINE** University and General Public

RESTORE - THE GOLDEN STEPPE

Synopsis / This documentary focuses on the coral restoration efforts in the Dominican Republic. The coral restoration organizations Fundemar and Secore International have joint forces to give the coral reef of the Caribbean a future! Vanessa Cara-Kerr started underwater filming in 2014 and hasn't stopped ever since. Now she films under the name "Reef Patrol" and collaborates with ocean conservation organisations do help make the world a better place for coral reefs.

CATEGORY Ecology & Environment **DIRECTOR** UN Decade on Ecosystem Restoration **PRODUCED BY** UN Decade on Ecosystem Restoration **RUNNING TIME** 6 min. **COUNTRY** Kazakhstan **YEAR** 2023 **AGE GUIDELINE** University and General Public

RESTORE - THE SINKING SHORE

Synopsis / We are experiencing a dangerous decline in nature: One million species are threatened with extinction, soils are turning infertile and water sources are drying up. But there are glimmers of hope: Made up of over 17,000 islands, Indonesia is the world's biggest archipelago. Through climate related sea level rise, its shores are sinking. Fishing communities are now pioneering an ingenious solution to the challenge. Learn how they turn the tides.

CATEGORY Ecology &Environment **DIRECTOR** UN Decade on Ecosystem Restoration **PRODUCED BY** UN Decade on Ecosystem Restoration
RUNNING TIME 8 min. **COUNTRY** Indonesia **YEAR** 2023
AGE GUIDELINE University and General Public

RETRIEVING PLASTIC

Synopsis / The Great Bubble Barrier is preventing plastic waste reaching the ocean from rivers and canals. More than two-thirds of plastic in our oceans comes from rivers and canals. Preventing this plastic waste reaching the sea is essential if we are to protect marine environments and biodiversity. The Great Bubble Barrier is an innovative approach to capturing fugitive plastic in waterways, developed by a fast-growing Dutch start-up located in the north of Amsterdam. By pumping air through a perforated tube at the bottom of a waterway, it creates a screen of bubbles which blocks and diverts plastics into a catchment system, capturing plastic from the entire width and depth of the waterway without hindering ship traffic or marine life.

CATEGORY Ecology & Environment **DIRECTOR** Simon Van Gorcum & Mark Lindenberg **PRODUCED BY** Zoe Jones & Parisa Shirvani
RUNNING TIME 6 min. **COUNTRY** The Netherlands **YEAR** 2021
AGE GUIDELINE University and General Public

SEA FOAM: WHAT CAUSES THIS LAND BUBBLE BATH?

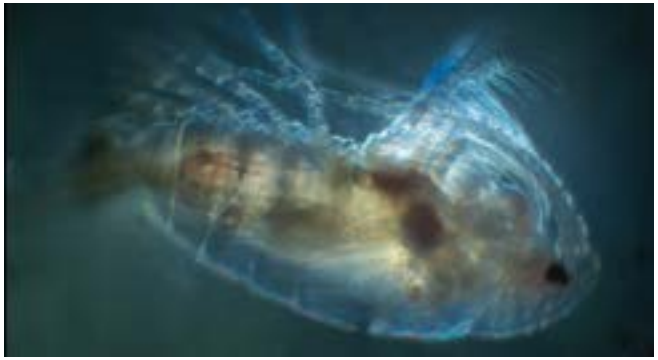
Synopsis / Giant walls of foam are blanketing coastal towns around the world. Some say it's whale sperm, other say it's pollution. What's behind the onshore bubble bath and is it safe?

CATEGORY Family Edutainment **DIRECTOR** Hannah Draper **PRODUCED BY** Hannah Draper **RUNNING TIME** 5 min. **COUNTRY** Australia **YEAR** 2022 **AGE GUIDELINE** Secondary School (12–16)

SPIRIT OF THE FOREST

Synopsis / A little girl stumbles into a sacred grove near her village in South India. She disturbs the spirit of the forest, who takes her on an adventure to illuminate the origins of this ancient swampland. In most films, plants are nothing more than background scenery. But in truth, they often serve as living museums of our ecological heritage. A fascinating manifestation of this are "sacred groves" – relict forests found in pockets all over the world that have been preserved by indigenous communities through folklore grounded in scientific principle. The Myristica swamps of south India, with their bizarre tangle of aerial roots, are especially interesting because many unique flora and fauna found here have their origins in ancient Gondwanaland. As a botanical artist, a screenwriter, and a 2D animator, we wanted to harness the power of storytelling to engage children (and adults) with the complexities of their increasingly endangered environments. We wanted to play with the idea of making plants central to the plot of the film, grounding all the hand-painted artwork in real species from the region. With the support of a National Geographic Storytelling Fellowship, we visited the swamps along with biologists, sound artists and locals, and left feeling that the layers of meaning we unearthed demanded an experience that could really take viewers on a journey. Our vision was to capture the fragile essence of this interconnected web of nature and culture through a tale of magic, fantasy and the human imagination.

CATEGORY Ecology & Environment **DIRECTOR** Nandini Rao, Nirupa Rao, Kalp Sanghvi **PRODUCED BY** Nirupa Rao, Nandini Rao, Funded by National Geographic Society **RUNNING TIME** 7 min. **COUNTRY** India **YEAR** 2022 **AGE GUIDELINE** Primary School (9-11)



SUPER PLANKTON - THE INVISIBLE MARVELS THAT SUSTAIN OUR OCEAN

Synopsis / Plankton may be tiny, microscopic creatures invisible to the naked eye, but they sustain our oceans. Without them life as we know it would cease to exist.

CATEGORY Ecology &Environment **DIRECTOR** Neha Dixit **PRODUCED BY** RoundGlass Sustain **RUNNING TIME** 5 min. **COUNTRY** India **YEAR** 2022
AGE GUIDELINE University and General Public

THE LIFE AND TIMES OF JENAH

Synopsis / Jenah, the black-spot snapper, spends her life in all three tropical marine ecosystems – born in the mangroves, grows up in the seagrass beds and lives her adult life in the coral reefs. These ecosystems are as beautiful as they are threatened by human activity. Join her as she navigates the challenging path to adulthood, swimming amongst the feet of giants, greener on the other side and nature's art gallery. The Life and Times of Jenah is a labour of love. It is aimed at placing the viewer in the shoes, or rather the fins, of a fish that uses all three tropical marine ecosystems within its life cycle. Growing up, she encounters new ecosystems, meets new friends and faces human-induced threats. Yew Aun is a marine biologist by training and is currently working in the realm of biodiversity policy. He has a keen interest in biodiversity and conservation.

CATEGORY Non-Verbal & Science Shorts **DIRECTOR** Yew Aun Quek
PRODUCED BY Yew Aun Quek **RUNNING TIME** 8 min.
COUNTRY Malaysia **YEAR** 2023
AGE GUIDELINE Primary School (9–11)

ANTHROPOSEA - THE HUMAN OCEAN

Synopsis / "Anthroposea: The Human Ocean" follows a group of social science researchers sailing along the southwest coast of the UK, exploring how people are part of the sea.

CATEGORY Ecology & Environment **DIRECTOR** Michelle Sanders
PRODUCED BY Oxford University **RUNNING TIME** 11 min.
COUNTRY United Kingdom **YEAR** 2022
AGE GUIDELINE University and General Public

BLUE HOPE - MARINE RENEWABLES

Synopsis / The natural world is in crisis. The devastating effects of climate change are powered by our burning of fossil fuels for energy, yet we also need to power our lives... what is the solution? In this punchy short, we explore the exciting potential for marine renewables, discovering how scientists protect marine mammals, invent new cutting-edge technology, work with giant indoor wave tanks and how this approach offers new hope in the fight against climate change. Natasha Phillips is an early-career director based in Cornwall, specialising in short, documentary films. After beginning her career as a scientist, her transition into film came through a passion for the communication of complex issues through engaging storytelling. She is a National Geographic Explorer, drawing on her endless curiosity and a forensic eye for detail to direct documentaries exploring fascinating stories from new scientific discoveries to ancient history and modern social issues.

CATEGORY Ecology & Environment **DIRECTOR** Natasha Phillips
PRODUCED BY Natasha Phillips, Lawrence Eagling **RUNNING TIME** 11 min.
COUNTRY United Kingdom **YEAR** 2022
AGE GUIDELINE University and General Public

E.C.O AGENTS

Synopsis / Rafaela, Rubén, Richie, and Rosita are the E.C.O. Agents, young secret agents with the mission of saving the planet. After identifying an adult suspected of polluting or wasting resources in their city, an undercover agent infiltrates his environment to identify his environmental bad practices, and with the advice and practical solutions of a real girl or boy who advises the mission, raise awareness to transform each person into another E.C.O. agent.

CATEGORY Family Edutainment **DIRECTOR** Darío Vejarano
PRODUCED BY Canal Capital **RUNNING TIME** 13 min. **COUNTRY** Columbia
YEAR 2022 **AGE GUIDELINE** Primary School (9-11)

GARDENING MARINE FORESTS: A HANDS-ON APPROACH TO RESTORATION

Synopsis / What if people could be the secret to transforming ocean deserts into rich forests filled with an abundance of life? Join two marine scientists as they explore how a hands-on approach to marine restoration is working to revive marine kelp forests in South Korea. During their trip, they witness how a deep connection with the ocean is inspiring change. In Korea, this connection runs across society, from a hundred's year-old guild of female free divers to the Korea Fisheries Agency using the latest techniques to manage their kelp forests. By recognising that while people may take from the sea, people can also take care of the sea, they are charting a new course to thriving kelp forests all around the world.

CATEGORY Ecology & Environment **DIRECTOR** Stefan Andrews
PRODUCED BY Adriana Verges, Aaron Eger, Stefan Andrews
RUNNING TIME 20 min. **COUNTRY** Australia **YEAR** 2021
AGE GUIDELINE University & General Public

KELP – SOUTH AFRICA'S GOLDEN FORESTS

Synopsis / Journey to South Africa's Western coastline and catch a glimpse of a unique forest not many know about. The film sheds light on the multitude of values around the Great African Seaforest, and the many contributions it provides - as a harvested resource that supports multiple livelihoods, to the sense of peace kelp forests imbue into those lucky enough to dive through. In an era of increasing climate change, this short film makes a case for the sustainable management of these golden underwater forests as a space of deep natural heritage, touching upon aspects of conservation, livelihoods, race, and culture.

CATEGORY Ecology & Environment **DIRECTOR** Akshata Mehta
PRODUCED BY Akshata Mehta, iKraal Studios, BlueConnect: Blue growth opportunities in changing kelp forests (SANOCEAN Project Number 287191 funded through the South African National Research Foundation and Norwegian Research Council) **RUNNING TIME** 14 min.
COUNTRY South Africa **YEAR** 2022
AGE GUIDELINE University and General Public

MIGRANT TREES

Synopsis / The documentary tells how, thanks to an European project, a group of scholars working along the European Alpine Space have studied the tree plants that migrated into our Alpine environment to find and improve a common management method for them. A comparison for the sustainable use of plants that can be functional in adapting to Climate Change but also controlled and safe against tree invasiveness. A collection of significant examples with an interweaving of image shots in several European countries of the Alpine region (Italy, Germany, Austria, France and Slovenia) reveals the delicate balance of nature and the efforts towards a more responsible management of non-native tree species present in the Alpine Space. What emerges is the importance of transnational comparison and the sharing of good management practices, already underway in various countries, as well as the need for the involvement of all stakeholders, starting with the youngest ones.

CATEGORY Ecology & Environment **DIRECTOR** Nicola La Porta
PRODUCED BY Edmund Mach Foudation - Aringa Studio
RUNNING TIME 12 min. **COUNTRY** Italy **YEAR** 2021
AGE GUIDELINE University and General Public

ON THE EDGE OF EXISTENCE: REDISCOVERING A LOST CORAL

Synopsis / In March 2020, the world changed in a way that none of us could have predicted. As many countries began to close their borders, a team of marine biologists, including Dr. Bryan Wilson, found themselves having to abandon their research expedition to the Chagos Archipelago in the central Indian Ocean. But on one of the very last dives, Bryan spotted something astonishing – the once thought to be extinct Chagos Brain Coral. In summer 2021 Bryan and his team returned to the reef, in an attempt to rediscover this rare and endangered coral.

CATEGORY Natural Science, Life Science & Technology **DIRECTOR** Rob Key **PRODUCED BY** Fiona Suttle **RUNNING TIME** 15 min. **COUNTRY** United Kingdom **YEAR** 2022 **AGE GUIDELINE** University and General Public

PIA AND WILD NATURE - THE MIRACULOUS CREATURES OF THE NAMIB DESERT

Synopsis / Pia has traveled to the Namib Desert. Far away from civilization, she visits the Gobabeb Desert Research Station and learns amazing things about the miraculous creatures of the Namib Desert. First, Pia meets a dune shark. Contrary to its dangerous-sounding name, it is a very cute little animal. It spends most of the day hidden in the sand dunes, where it swims under the sand. With the young researcher Ndelimona, Pia can get a close-up look at the amazing desert animal. After that, Pia goes in search of a wondrous desert plant. The Welwitschia consists of only one pair of leaves, it can survive with a few drops of water a year in the middle of the desert and lives to be over 1,000 years old! But not only Pia finds this persistent plant interesting – a desert chameleon also appears on top of the Welwitschia. While searching for nocturnal animals, Pia discovers that also at night, there is a lot going on in the Namib Desert. She encounters an eight-eyed desert spider, a luminous web-footed gecko and finally hears the laughing call of a barking gecko.

CATEGORY Family Edutainment **DIRECTOR** Marcella Müller **PRODUCED BY** text und bild GmbH | Bayerischer Rundfunk **RUNNING TIME** 25 min. **COUNTRY** Germany **YEAR** 2021 **AGE GUIDELINE** Primary School (9-11)

SECRETS OF THE FOREST

Synopsis / Explorer and triple science awardee Brooke Fleming embarks on a new adventure to discover the wonders, significance and hidden secrets of the forests. Brooke is a young explorer, self confessed stargazer and adventurer. She was awarded an academic scholarship in physics, chemistry and biology and is an ambassador for the world of space, cosmology and all things intergalactic. Searching for compelling stories that connect to our emotions and takes the audience on a journey.

CATEGORY Family Edutainment **DIRECTOR** Leon Mitchell
PRODUCED BY Cinalight Studios **RUNNING TIME** 15 min.
COUNTRY United Kingdom **YEAR** 2022
AGE GUIDELINE Secondary School (12-16)

SHADOW OF THE RIVER

Synopsis / A young biologist searches for the remains of wildlife once present in the infamous Los Angeles River, attempting to show that its ecosystem is still rich and worth fighting for. Wiktoria Ciesielska is an upcoming wildlife filmmaker from Poland. Wiktoria has pursued a career that merges two of her biggest passions: nature and visual arts. This short documentary is her directorial debut on the environmental issues of the Los Angeles River.

CATEGORY Ecology & Environment **DIRECTOR** Wiktoria A. Ciesielska
PRODUCED BY Wiktoria A. Ciesielska **RUNNING TIME** 14 min.
COUNTRY United States **YEAR** 2022 **AGE GUIDELINE** University and General Public

THE DR. GECKO SHOW - SEX AND GENDER

Synopsis / Dr. Gecko stars in this humorous animated talk-show about science and genomics. In this special episode, with help from friends, they take on sex and gender from a positive scientific perspective.

CATEGORY Family Edutainment **DIRECTOR** Marcos Almada Rivero **PRODUCED BY** INMEGEN México **RUNNING TIME** 12 min. **COUNTRY** Mexico **YEAR** 2022 **AGE GUIDELINE** Secondary School (12-16)

WROUGHT

Synopsis / A visual exploration of decay begs questions about our relationships with other species. Wrought begins with that universal moment of disappointment: despite all best efforts, our food has gone bad. But instead of turning away in disgust, Wrought zooms in with curiosity through time-lapse photography. Wrought explores how we construct categories for the world. It examines the categories of spoil, ferment, compost and rot, coaxing audiences to decompose the binary of human and non-human. We are forged from the relationships that transgress such binaries; we are all, indeed, wrought.

CATEGORY Non-Verbal & Science Shorts: Science Meets Art Package
DIRECTOR Joel Penner & Anna Sigrithur
PRODUCED BY Biofilm Productions **RUNNING TIME** 20 min.
COUNTRY Canada **YEAR** 2022
AGE GUIDELINE University and General Public

FROM SPACE TO SEA - TOWARDS THE DETECTION OF PLASTIC WITH REMOTE SENSING

Synopsis / The European Space Agency and Deltares partnered up to solve one of the biggest challenges of the modern world: plastic pollution in the marine environment. Together, they want to use satellites and remote sensing technologies to provide the means to locate where in oceans and rivers plastics accumulate. Ideally, so it can be cleaned up and prevented from reaching our global water sources in the first place.

CATEGORY Ecology & Environment **DIRECTOR** Laurent Masson & Simone Punzo **PRODUCED BY** Chilled Winston Studio, The European Space Agency, Deltares **RUNNING TIME** 26 min. **COUNTRY** The Netherlands **YEAR** 2022 **AGE GUIDELINE** University and General Public

WILD ABU DHABI: THE TURTLES OF AL DHAFRA

Synopsis / The documentary showcases the groundbreaking work of the Environment Agency – Abu Dhabi (EAD) team who are dedicated to studying turtles in the hottest sea in the world, the Arabian Gulf, also known as the world's natural climate change laboratory. The film takes viewers on an incredible and insightful journey learning about EAD's marine turtle conservation program and follows the team as they island hop through beautiful Al Dhafra, conducting challenging scientific research including mapping the movement of green turtles for the first time in the region. The documentary also outlines how EAD is responding to the key threats to turtles – namely climate change, plastics and abandoned fishing gear and encourages the public to be part of the solution.

CATEGORY Ecology & Environment **DIRECTOR** Environment Agency – Abu Dhabi (EAD) **PRODUCED BY** Environment Agency – Abu Dhabi (EAD) **RUNNING TIME** 40 min. **COUNTRY** United Arab Emirates **YEAR** 2021 **AGE GUIDELINE** University and General Public

WILD HOPE - COFFEE FOR WATER

Synopsis / This series of films highlights the intrepid change-makers who are working to restore and protect our planet. Each episode inspires audiences with stories of bold interventions, unexpected alliances, and nature's resilience. The series reveals how local action can spark powerful change - and provides a refreshing dose of hope in an increasingly cynical world. This episodes examines growing coffee to save Mozambican rainforests.

CATEGORY Ecology & Environment **DIRECTOR** NA **PRODUCED BY** An HHMI Tangled Bank Studios and Part2 Pictures production in co-production with Wild Elements **RUNNING TIME** 28 min. **COUNTRY** United States **YEAR** 2022 **AGE GUIDELINE** University and General Public

WILD HOPE - DOES NATURE HAVE RIGHTS ?

Synopsis / This series of films highlights the intrepid change-makers who are working to restore and protect our planet. Each episode inspires audiences with stories of bold interventions, unexpected alliances, and nature's resilience. The series reveals how local action can spark powerful change - and provides a refreshing dose of hope in an increasingly cynical world. This episodes examines what, if any, rights nature has.

CATEGORY Ecology & Environment **DIRECTOR** NA **PRODUCED BY** An HHMI Tangled Bank Studios and Part2 Pictures production in co-production with Wild Elements **RUNNING TIME** 28 min. **COUNTRY** United States **YEAR** 2022 **AGE GUIDELINE** Secondary School (12–16)

A LEAGUE OF EXTRAORDINARY MAKERS: RISE OF THE MAKERS

Synopsis / Every movement needs its superheroes. They inspire, they lead, they create, they sacrifice. And we went in search of them. Rise of the Makers is part of the series A League of Extraordinary Makers where we trace the birth and rise of the Maker Movement - it begins in the American DIY garages, seeps out of the fringes onto the streets, studios, labs and factories where Makers are rising to become the superheroes the world needs today. These are people who don't buy stuff. Instead they just make their own. Or hack, repair and remake. A chair, a laptop, a drone, a dress that reads your mind, a brand new material that can build cars, ships and space settlements... Sometimes it's a cold brew coffee machine, sometimes a million face shields, it can even be a city, or our futures. This is where artists, designers, inventors can make almost anything and hack everything!

CATEGORY Culture & History **DIRECTOR** Mayurica Biswas, Dipti Chadha
PRODUCED BY Soon Ling - Commissioning Editor (CNA)
RUNNING TIME 48 min. **COUNTRY** India **YEAR** 2022
AGE GUIDELINE University and General Public

FOREST PARTNERS

Synopsis / The documentary highlights an often unseen side of forests – the economic ecosystems thriving between public and private organisations and local communities. The film demonstrates solutions that combine technology and traditional knowledge to protect tropical forests, with shared benefits. Forest Partners showcases successful innovations in sustainable production systems worldwide, proving it is possible to obtain social, environmental, and economic benefits by preserving or restoring forest landscapes. The initiatives documented by the film are set in South America, Africa, and Asia, in regions where there are still preserved forest landscapes, but where the impacts of deforestation and forest degradation are already widely felt.

CATEGORY Ecology & Environment **DIRECTOR** Fred Rahal Mauro
PRODUCED BY Fred Rahal Mauro **RUNNING TIME** 52 min.
COUNTRY Brazil **YEAR** 2022
AGE GUIDELINE University and General Public

ONE MICROBE AT A TIME

Synopsis / Europe is 96% dependent on oil and gas outside the EU. The project „Prospectomics“ is funded by the EU and aims to revolutionize oil and gas production in terms of environmental friendliness and cost, and thus also in Europe, within the framework of laws and values, to promote this unfortunately still relevant energy source. Prospectomics hopes to learn whether oil and gas will be found beneath the surface by studying near-surface microbes. Certain geomicrobiological techniques have only recently become affordable to use on a large scale. This would require sampling only two meters of seafloor from a ship, rather than erecting derricks to penetrate kilometers deep into the seafloor. So this geomicrobiological approach would be equally easy on the environment and financially enable extraction within the EU, thus avoiding dependence on other countries. Of course, the researchers would also like to see an immediate halt to oil extraction, but even the most optimistic forecasts predict at least another 30 years of dependence on this raw material. The reportage accompanies the scientists on their two-week journey to the Barents Sea to take the first samples for their analyses. It shows how much effort goes into such an expedition, what problems arise, how hard the work is on the ship and, above all, with what spirit of research the project is approached.

CATEGORY Ecology & Environment **DIRECTOR** Edgar Kutschera
PRODUCED BY FRANE Media, Prospectomics (GeoForschungsZentrum Potsdam) **RUNNING TIME** 45 min. **COUNTRY** Germany **YEAR** 2021-2022
AGE GUIDELINE University and General Public

SUDDEN SILENCE – ANIMALS RECLAIMING A WORLD IN LOCKDOWN

Synopsis / For bears, whales or rhinos wild spaces have become sparse. There is hardly a corner of the Earth where humans have not left their footprint. But during the pandemic lockdowns, four billion people were supposed to stay at home to contain COVID19. How did wildlife react to the sudden silence? For researchers worldwide, this is a unique opportunity! They are collecting movement data and analyzing observations on every continent. Rhinos start moving, orcas make themselves heard. Brown bears, deer and crows also provide surprising insights into animal behavior in times of the pandemic.

CATEGORY Ecology & Environment **DIRECTOR** Susanne Maria Krauß
PRODUCED BY In One Media im Auftrag von MDR in Zusammenarbeit mit ORF und ARTE **RUNNING TIME** 52 min. **COUNTRY** Germany **YEAR** 2023
AGE GUIDELINE University and General Public

THE LAST SEED

Synopsis / The film focuses on broad themes relating to the state of food and agriculture in Africa in the 21st century. Placing the struggle over the control of seed at the centre, it explains the processes that have led to this moment in human history and what it would take to interact with the planet in a way that does not threaten the very basis of life on Earth. The film raises two fundamental questions - what have we lost, and who can show us a better way? - and attempts to answer these questions using music, dance, moving visuals and the lived experiences and stories of African small-scale food producers. Experts outline the extent of the corporate capture crisis, explaining the underlying science, politics and economics in simple terms, punctuated by vibrant animations. Agroecological farmers from various African nations give testimony on the sustainability and adaptability of their agricultural practices and share morsels of wisdom worth exploring.

CATEGORY Ecology & Environment **DIRECTOR** Andrea Gema **PRODUCED BY** Jan Urhahn, Refiloe Joala, Famara Diédhiou **RUNNING TIME** 77 min. **COUNTRY** South Africa **YEAR** 2022 **AGE GUIDELINE** University and General Public

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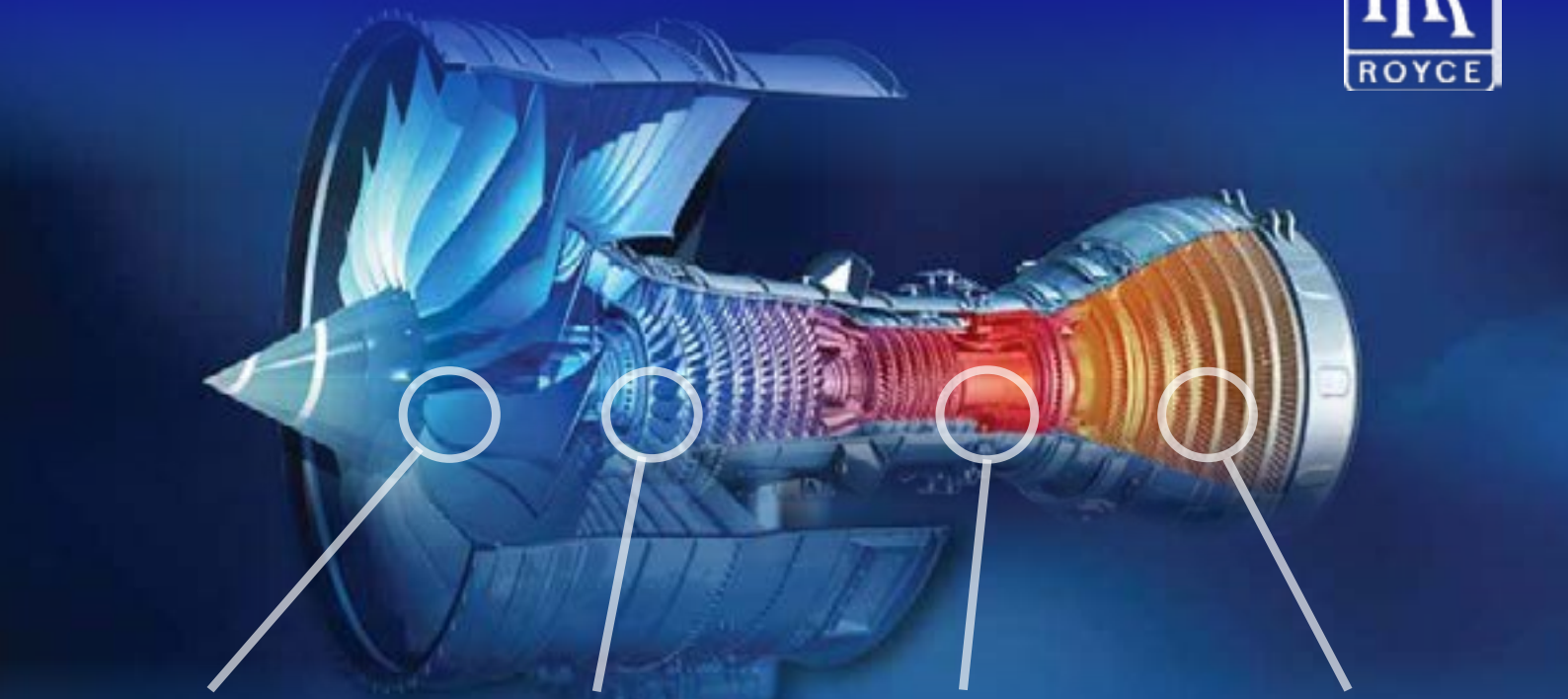
How does a jet engine work?



Suck

The fan – that is the easily visible blade wheel on the front side – draws a huge volume of air into the engine and accelerates it. The biggest Rolls-Royce engines have a fan diameter of about 3 metres and can thus shift up to 1,2 tonnes of air per second. Only approximately one-tenth of this is conveyed into the core engine that consists of compressor, combustor and turbine. Nine-tenths is conveyed around the core engine directly to the jet nozzle and constitutes a "bypass flow". This outer airflow provides about three-quarters of the total forward thrust of the engine.

Did you know this already?

An engine could move the air contained in a squash court in less than a second. In order to be as light as possible, the fan blades of the biggest Rolls-Royce engines are hollow inside.

Materials: titanium alloy or fibre composite materials.

Squeeze

The air introduced into the core engine is compressed by many rapidly rotating discs with blades, heats up and decelerates. In the course of passing through several compressor stages, it is compressed to a fiftieth of its normal volume.
If one were to compress the air from a phone box into a microwave oven, it would have the same pressure.

Did you know this already?

The high-pressure compressor of a Rolls-Royce Trent® engine with its hundreds of blades rotate at a speed of about 10,000 rpm. By the end of the compressor the air has attained a temperature of almost 700°C.

Materials: alloys based on titanium, steel or nickel

Burn

The air massively compressed by the compressor stages and heated up is conveyed into the combustor, where it is mixed with the kerosene and burned. The combustion gases generated during this process expand explosively in the direction of the turbine. While this is going on temperatures of up to 2,300°C are generated in the combustor – equivalent to half the temperature of the sun's surface. If the structure were not continuously aerated by a sophisticated system of laser-drilled cooling holes introducing air from the compressor, it would melt. For protective purposes the combustor has several layers of ceramic insulating coatings which are the thickness of just two sheets of paper, yet are able to reduce the temperature loading by 300°C.

Did you know this already?

Because the air flows so rapidly out of the compressor, special tricks are required to maintain the combustion – it is easier to ignite a match in a storm.

Materials: high temperature resistant nickel alloys with ceramic

Blow

The hot gases from the combustor are conveyed through a series of turbine stages. Each one of them gains energy from the steady flow of gas, rather like a windmill. This energy is primarily used to drive the fan and compressor via shafts. The blades have to be extensively cooled to prevent them melting. The hot air expands as it passes through the turbine stages, cools down and then leaves the jet nozzle at the back of the engine, thereby generating additional thrust. While this is going on the hot air from the core engine is mixed with the cold bypass flow around it. It is this combination that makes today's modern engines so quiet and efficient.

Did you know this already?

The turbine blades derive a huge amount of energy from the exhaust flow. In this way every one of the 66 high-pressure turbine blades of a Trent 1000 engine generates power equivalent to a Formula One racing car. The accelerated air reaches a speed of almost 1.500 km/h at the jet nozzle.

Materials: high temperature resistant nickel monocrystal alloys

www.rolls-royce.com

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The Association of Science Technology and Innovation (ASTI) is an association of educators, scientist, industry representatives and individuals who are committed to advancing the role of the scientific community in inspiring the youth of the nation to join and excel in the world of science. ASTI also plays an active role in the teaching, understanding and creating awareness of science, technology and innovation.

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