



DUMPARK

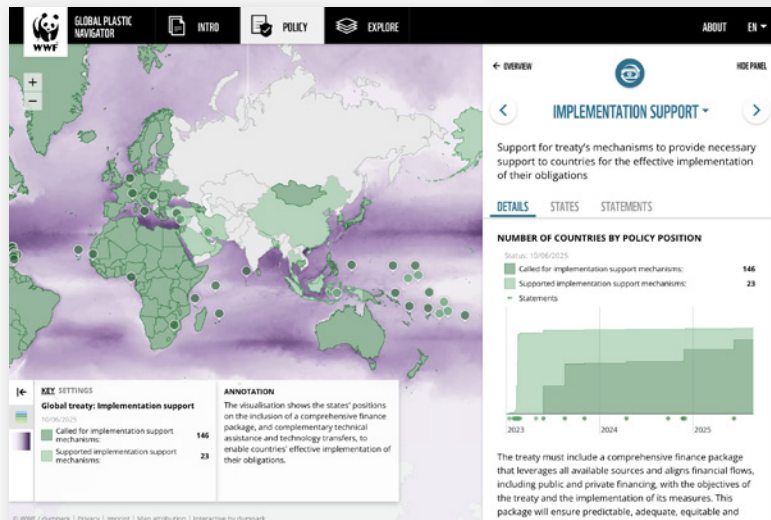
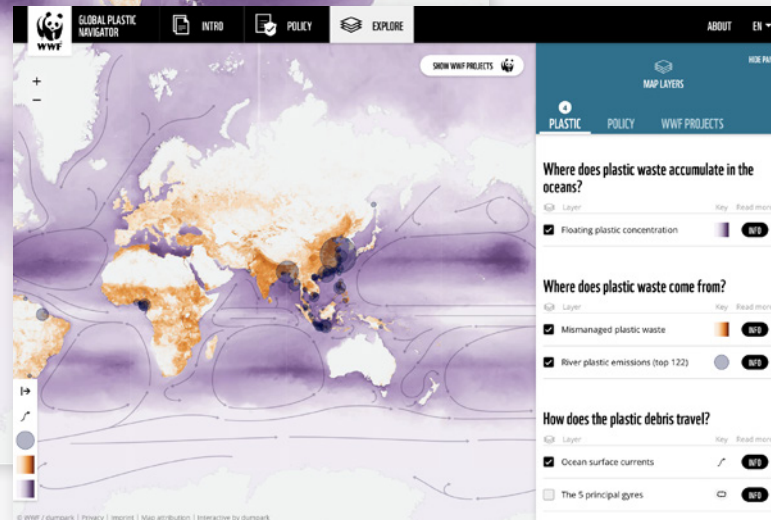
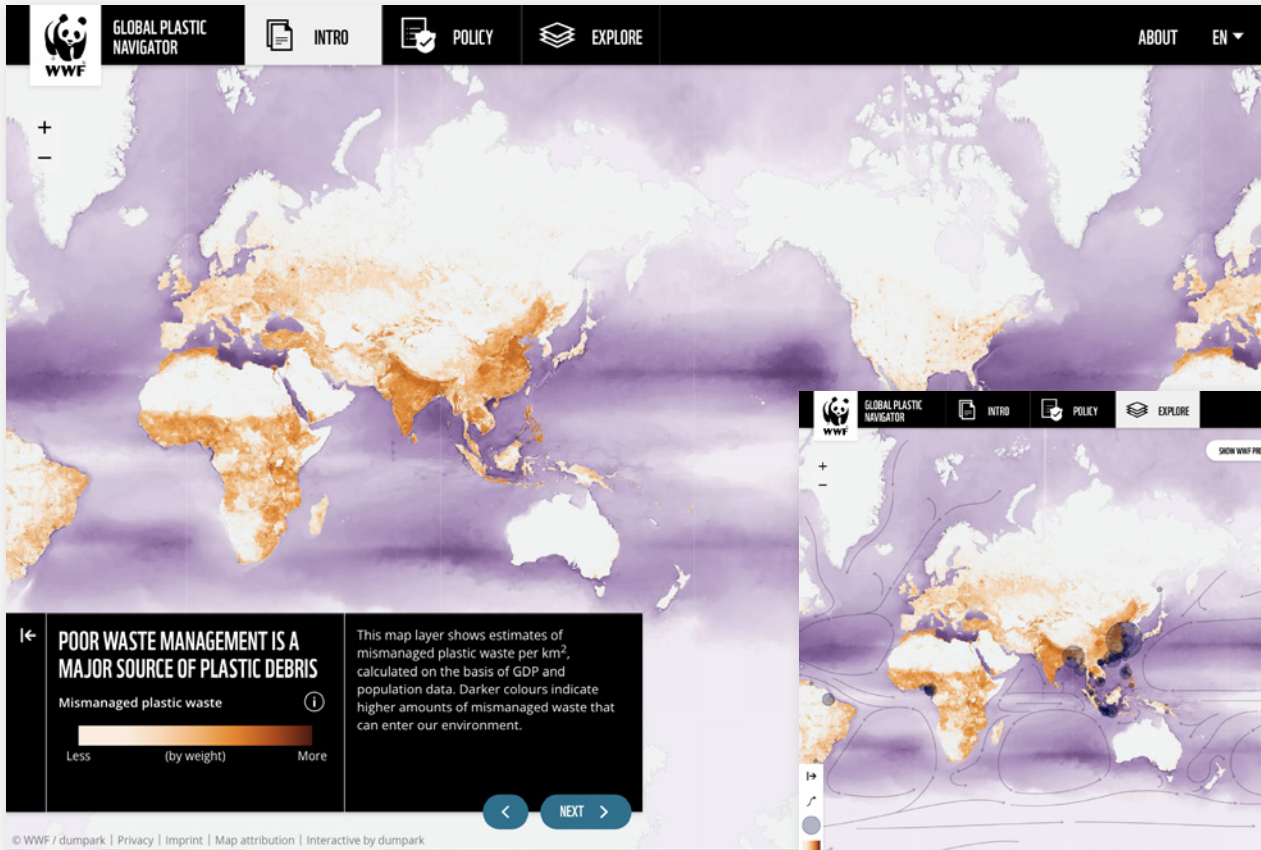
Data Visualisation and Information Design

Selected Projects

Dumpark is a small agency with a passion for visualising and communicating data and complex information. We specialise in interactive data visualisations and data-driven web applications as well as static infographics and diagrams for digital and print. We also provide consulting and expert feedback.

Our expertise spans creative and technical domains, including UX/UI and web design, iconography and illustrations, data analysis and visualisation, geospatial analysis and cartography, and software development.

[DUMPARK.COM](https://dumpark.com)

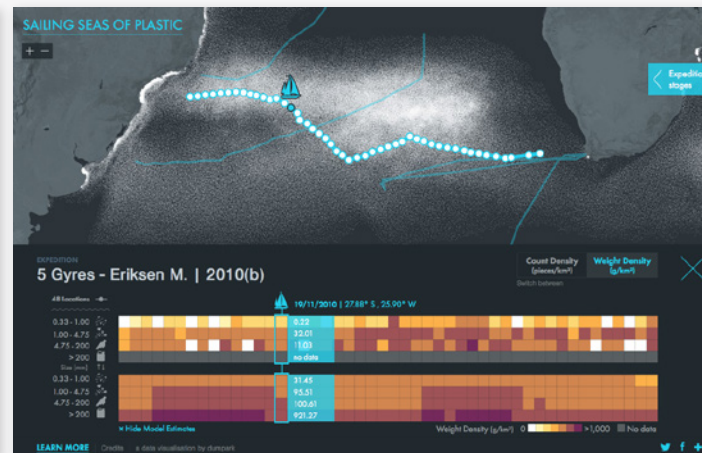
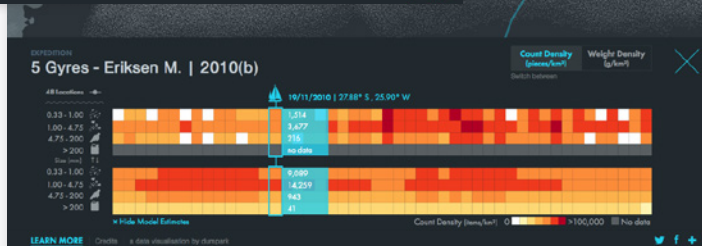
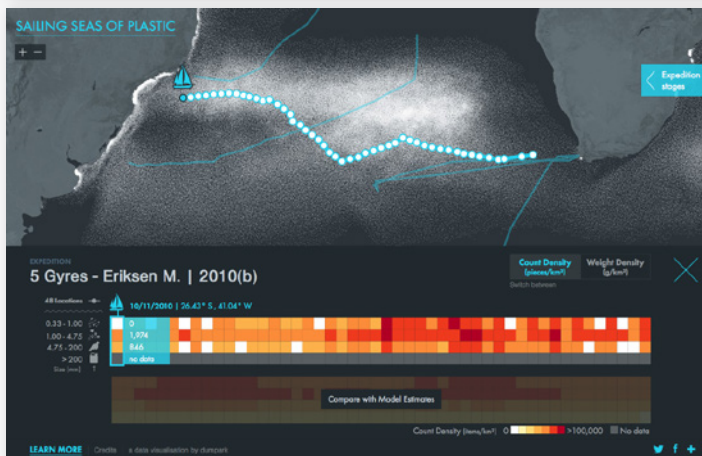
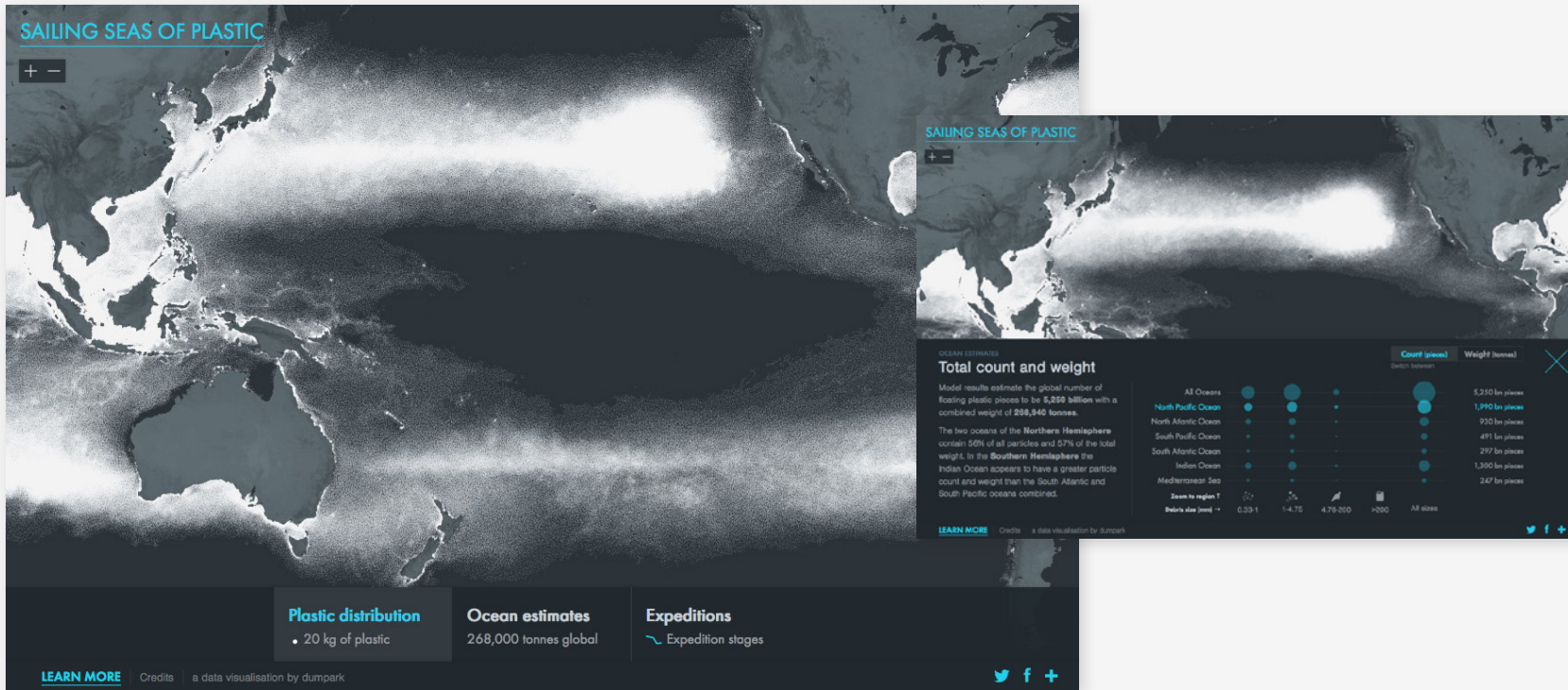


Global Plastic Navigator

The Global Plastic Navigator is an interactive web application developed to highlight the global issue of marine plastic pollution by visualising some of the best publicly available research alongside key physical drivers. It also shows relevant WWF projects around the as well as the growing global support for a strong international treaty to end plastic pollution.

Client
WWF Germany

Web
[Global Plastic Navigator](https://www.globalplasticnavigator.org/)

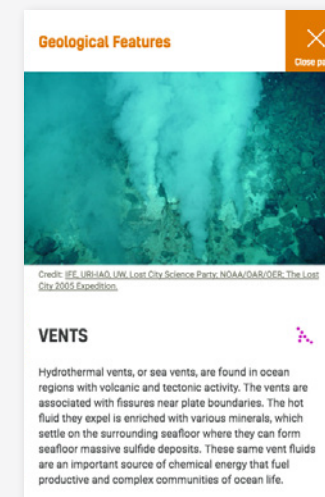
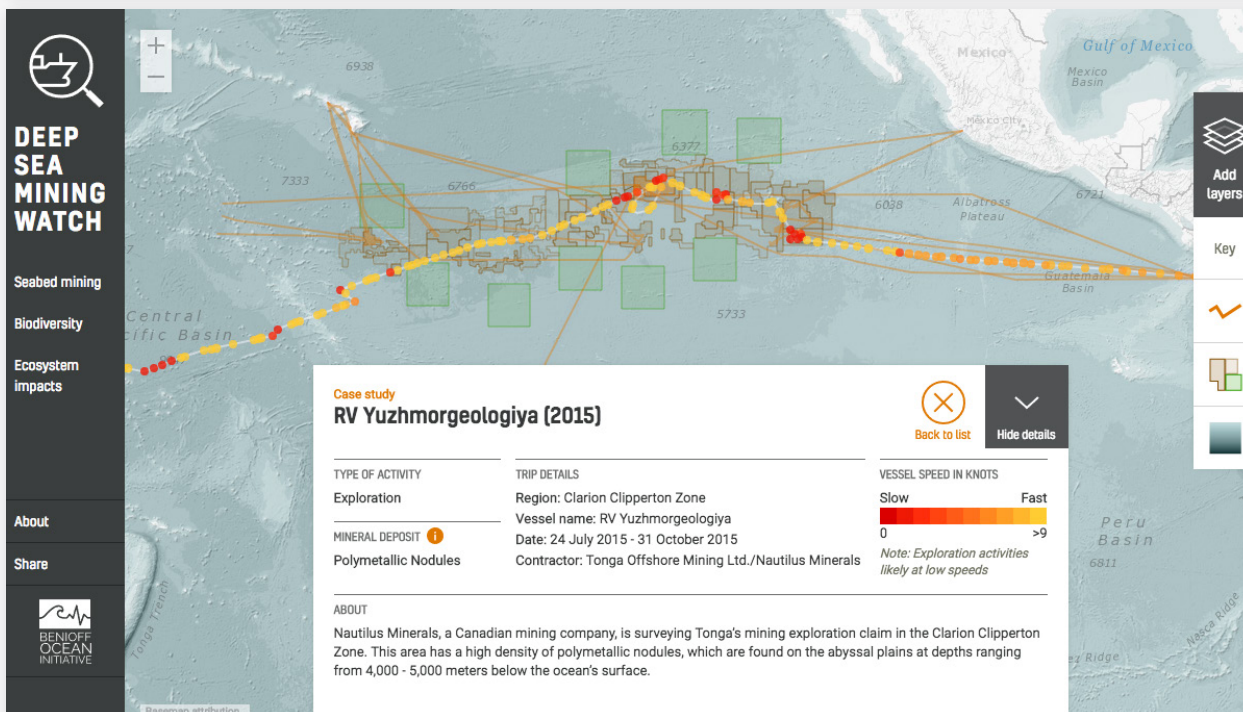
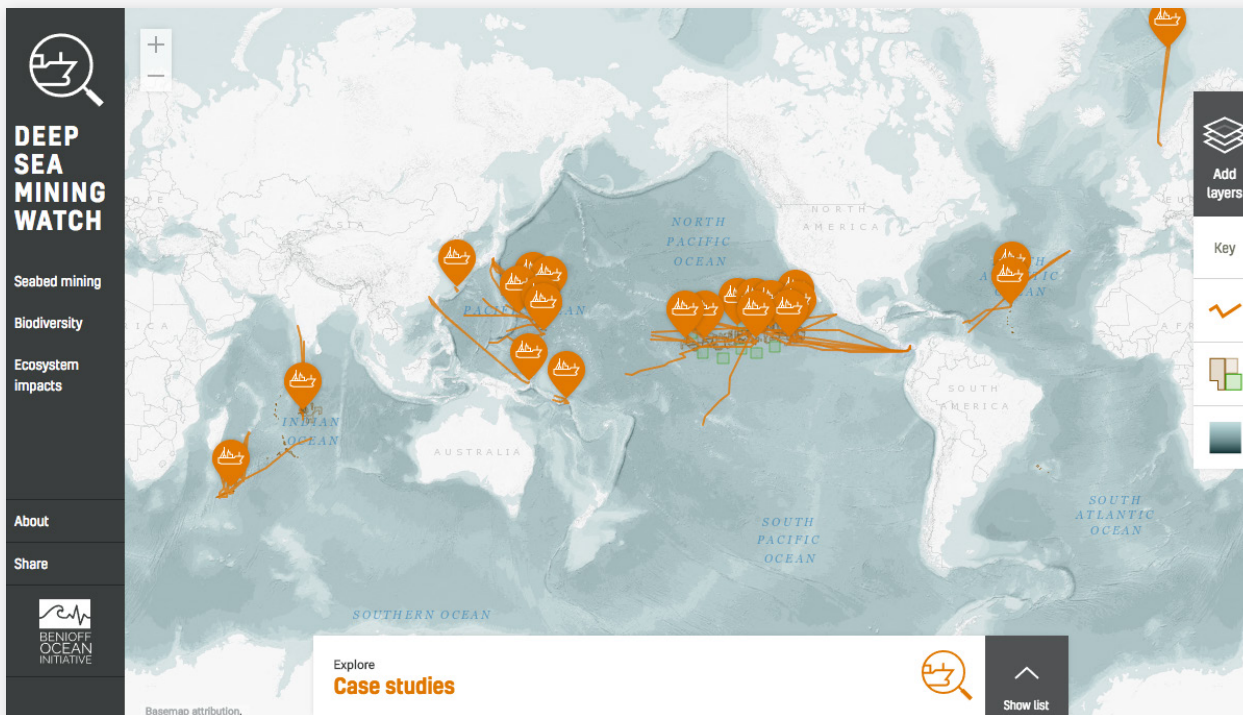


Sailing Seas of Plastic

This interactive map visualises the estimated concentration of floating plastic debris in the world's oceans. The densities are computed with a numerical model calibrated against a series of field data collected from the five main Oceans and the Mediterranean Sea. The website shows the various expeditions of the sail vessels participating in the data collection effort from 2007 to 2013, and allows the exploration of all plastic concentrations measured using surface net tows and visual sightings.

Client
Self-commissioned

Web
[Sailing Seas of Plastic](#)



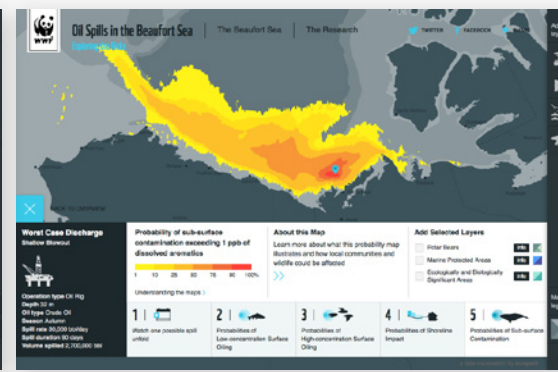
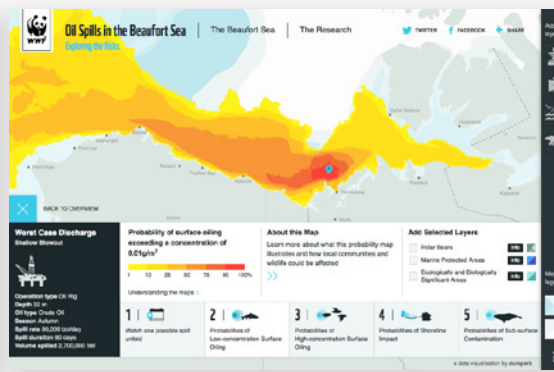
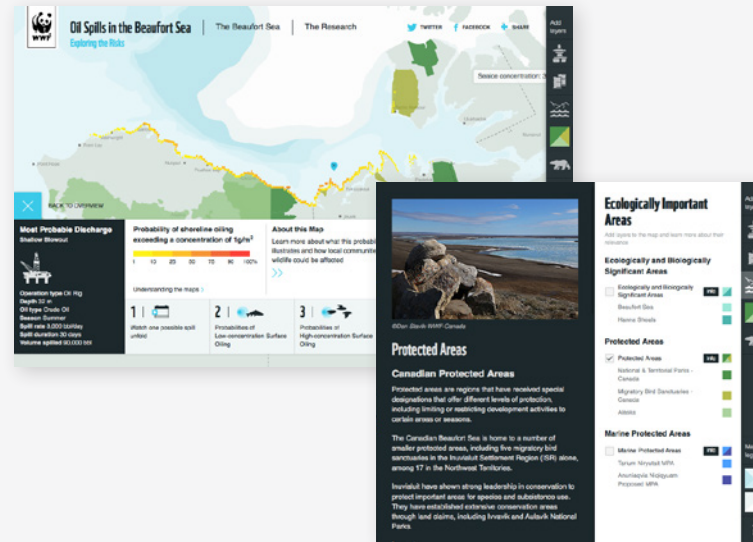
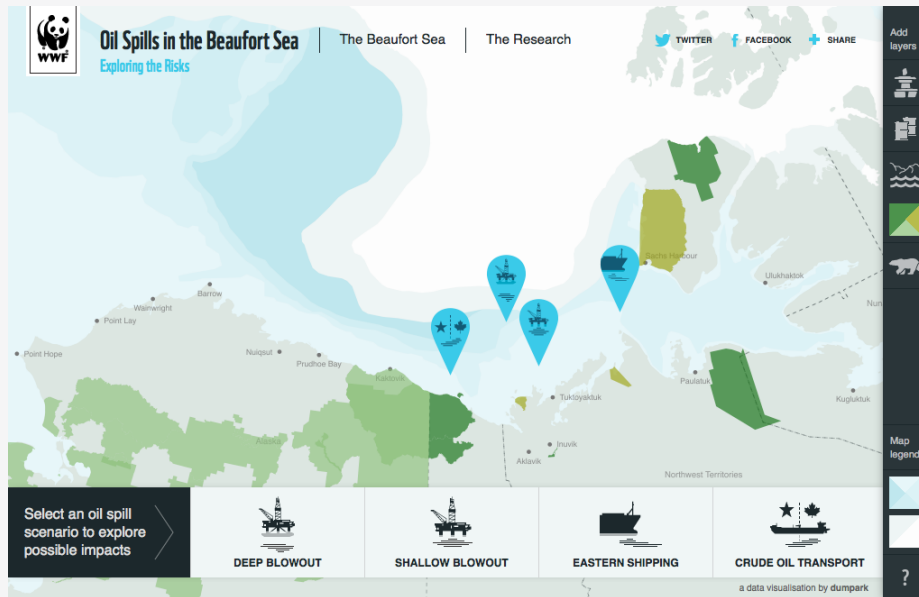
Deep Sea Mining Watch

The interactive map allows the public to watch over seabed mining activities in our oceans. In addition to existing claims for mining exploration granted by the international seabed authority, the application shows recent seabed mining activities by corporations and governments by visualising movements of research vessels believed to prospect the oceans seabeds for minerals. Researchers of the McCauley Laboratory identified these prospecting expeditions by analysing publicly available GPS data.

Client
McCauley Laboratory

Web
[Deep Sea Mining Watch](https://www.deepseaminingwatch.com)

WHAT WOULD AN OIL SPILL IN THE BEAUFORT SEA LOOK LIKE?

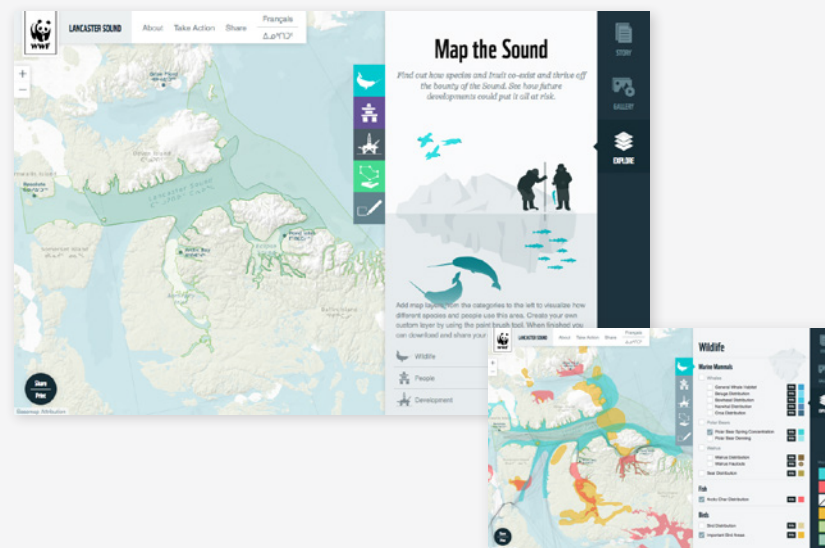
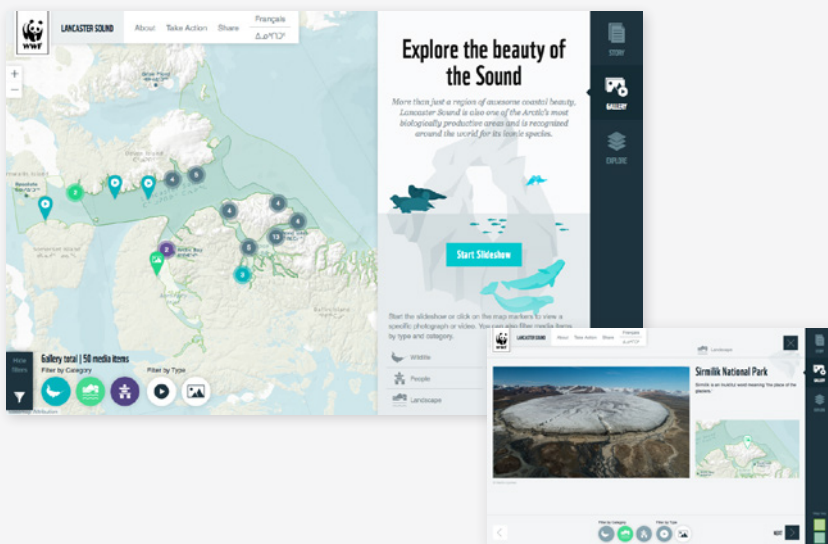
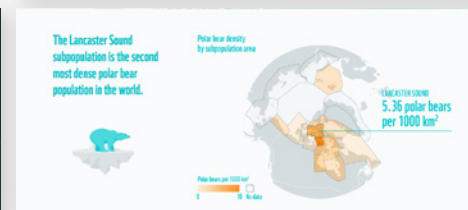
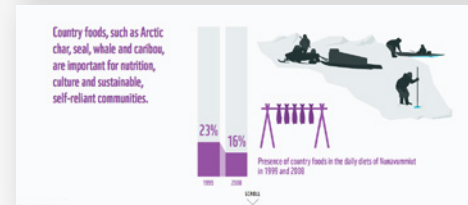
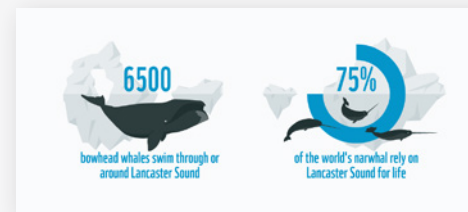
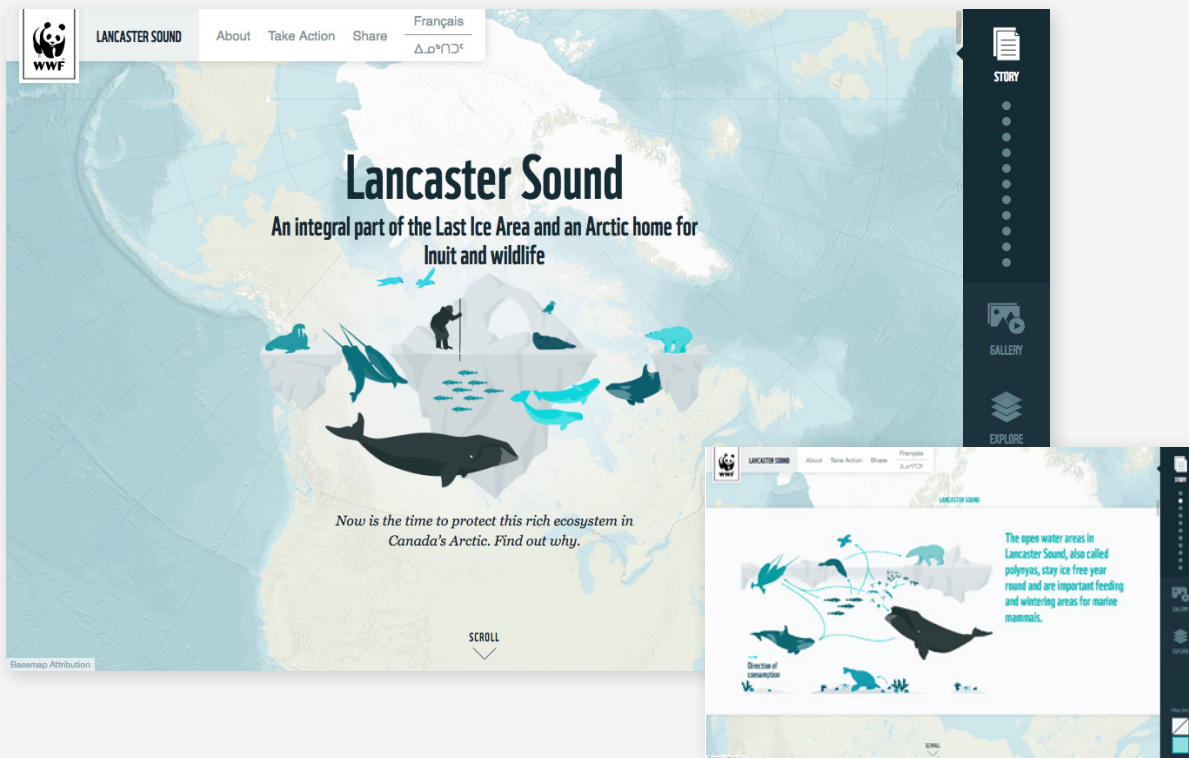


Beaufort Sea oil spill map

In order to help Canadians and Arctic communities understand the scale and nature of the risks of oil spills in the Beaufort Sea and inform critical ocean management and planning, WWF Canada has commissioned a scientific study that models how different types of oil spills would spread in the Beaufort Sea, and how the spills would overlap with significant areas. For a selection of these spill scenarios we were asked to produce this interactive visualisation that allows to assess the impact a possible oil spill may have on the socio-economic and environmental resources at risk.

Client
WWF Canada

Web
[Arctic Spills](#)



Lancaster Sound

The Lancaster Sound interactive map was created to raise awareness about this integral part of the arctic which is home to the Inuit and a variety of wildlife. It informs about the different uses and challenges the area is facing and shows the different proposals for establishing a National Marine Conservation Area. To increase its impact all content has been made available in English, French and Inuktitut. The site provides a guided introduction to the region and its key challenges with supporting infographics, a gallery illustrating the unique landscape, people and wildlife, as well as an exploratory map to visualise relevant data.

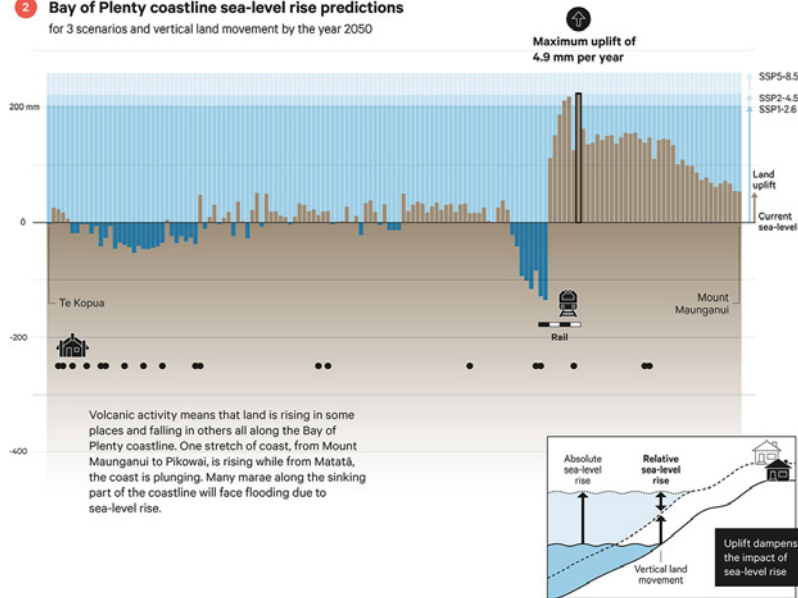
Client
WWF Canada

Web
[Lancaster Sound](https://www.wwf.ca/lan-caster-sound/)

BAY OF PLENTY

Where the land rises and falls

2 Bay of Plenty coastline sea-level rise predictions for 3 scenarios and vertical land movement by the year 2050

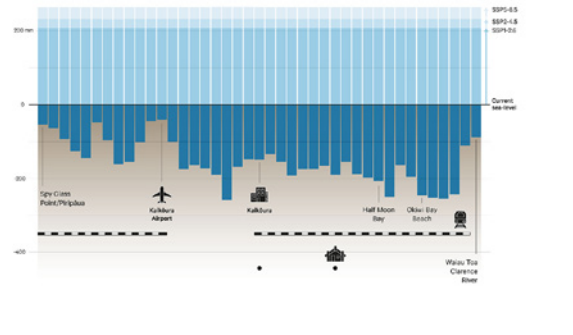


KAIKŌURA

Sudden changes can't be planned for

In 2016, this coastline was thrust upwards more than a metre in places, meaning it'll take centuries to sink back down to where it started at the current rate of land movement.

1 Kāikōura coastline sea-level rise predictions for 3 scenarios and vertical land movement by the year 2050

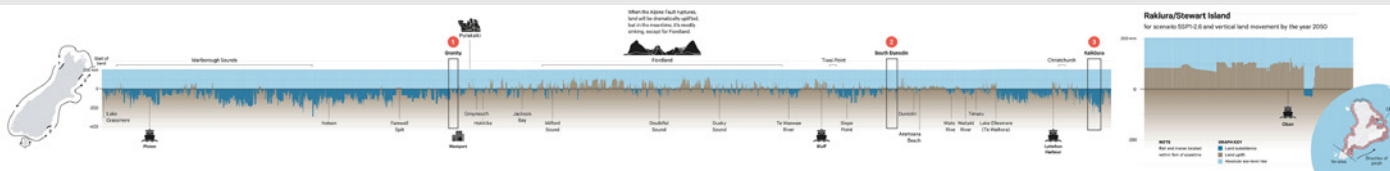
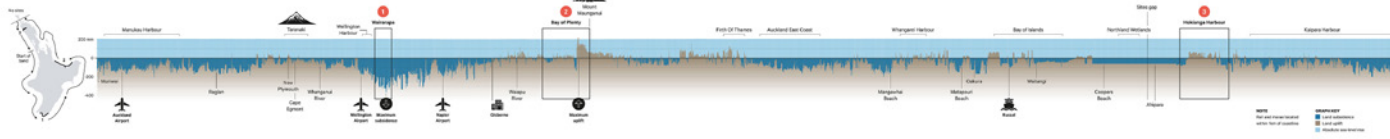


Sea-level rise projections for New Zealand

For the article "A map of the future", we produced a range of maps, charts and diagrams to illustrate the predicted combined effect of sea-level rise and vertical land movement. While land subsidence will accelerate sea level rise in most modelled locations, uplift will dampen the effects in some.

Client

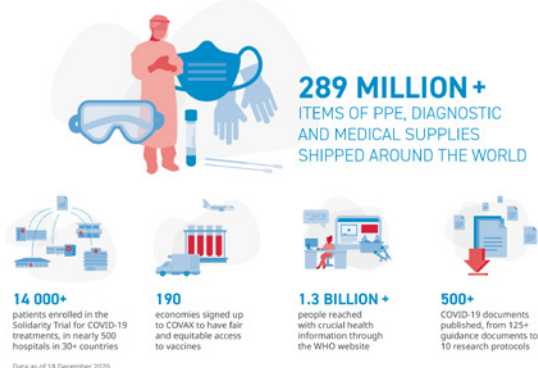
New Zealand Geographic



A YEAR WITHOUT PRECEDENT: WHO'S COVID-19 RESPONSE

TAKING STOCK OF ALL THAT'S
BEEN ACHIEVED - AND THE
PARTNERSHIPS WORKING TO
END THE PANDEMIC.

KEY ACHIEVEMENTS IN WHO'S COVID-19 RESPONSE



LAB TESTING CAPABILITY IN AFRICAN NATIONS ROSE DRAMATICALLY OVER 6 MONTHS, THANKS TO SUPPORT FROM WHO



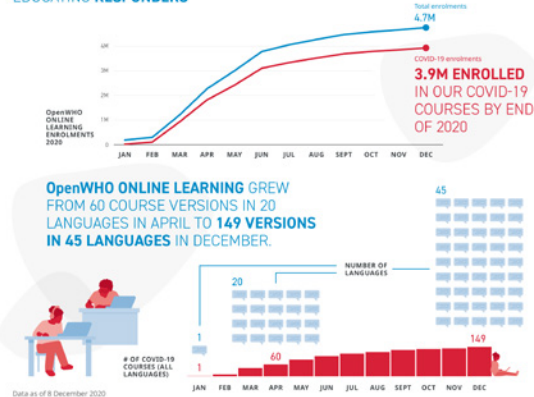
70 EMERGENCY MEDICAL TEAMS DEPLOYED TO 44 COUNTRIES



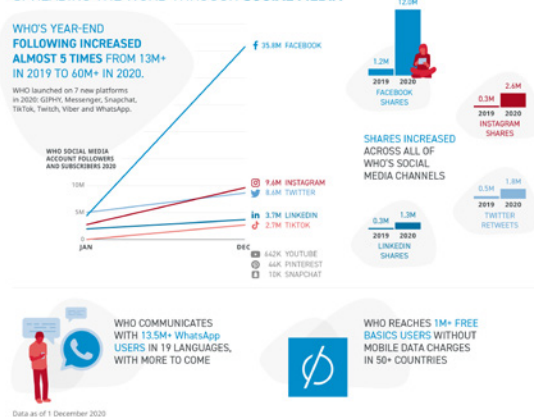
OXYGEN: A GAME-CHANGER FOR THE PANDEMIC AND BEYOND

Data as of 19 December 2020

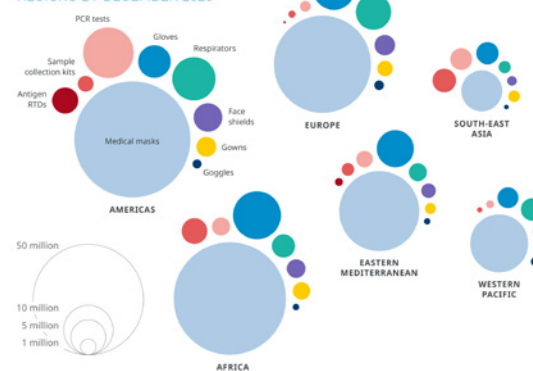
EDUCATING RESPONDERS



SPREADING THE WORD THROUGH SOCIAL MEDIA



SUPPLIES DELIVERED TO REGIONS BY DECEMBER 2020*

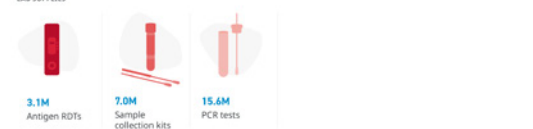


WORLDWIDE

PERSONAL PROTECTIVE EQUIPMENT (PPE)

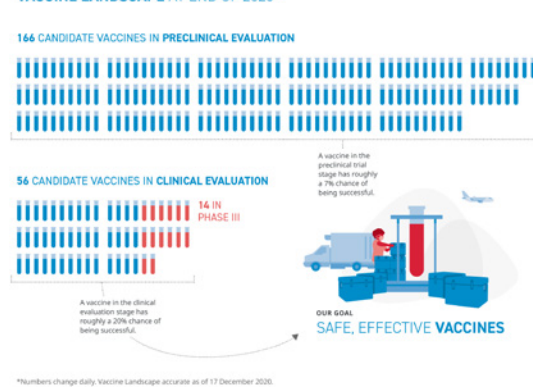


LAB SUPPLIES



*Data as of 18 December 2020

VACCINE LANDSCAPE AT END OF 2020*



WHO'S COVID-19 response

A series of static infographics to help communicate the different aspects of the WHO's COVID-19 response. For this feature, produced by The Spinoff, we created most visuals including graphs, charts, maps and illustrations. Our work also included the collection, review and analysis of the data to create the base for the storyline.

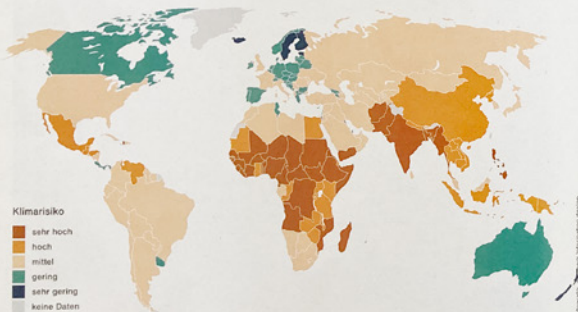
Client
The Spinoff/WHO

Web
[WHO's COVID-19 response](#)

DIE LAGE DER KINDER I

Umwelt & Gesundheit

Rund 2,2 Milliarden Kinder leben auf der Erde – und den meisten von ihnen geht es besser als ihren Altersgenossen früherer Generationen. Sie sind im Schnitt gesünder und besser ernährt als vor wenigen Jahrzehnten. Doch noch immer gibt es Millionen hungernde Kinder, und ihre Zahl stieg infolge der Covid-19-Pandemie und klimatischer Veränderungen zuletzt sogar wieder. Hinzu kommen wachsende Gesundheitsgefahren durch Luftverschmutzung, Allergien und Bewegungsmangel



„Extrem starkes Klimarisiko“ für eine Milliarde Kinder

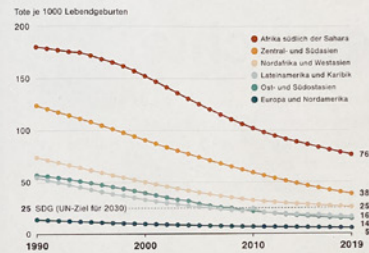
Laut dem ersten Klimarisiko-Index für Kinder von Unicef lebt fast jedes zweite Kind der Welt in einem der 33 „extrem stark“ durch Dürren, Fluten und Stürme bedrohten Ländern

22

Kinder

Immer weniger sterben im Kleinkindalter

Die Sterblichkeitsrate von Kindern unter fünf Jahren ist in den vergangenen Jahrzehnten deutlich gesunken. Es gibt jedoch große regionale Unterschiede



„Die Welt hat Fieber. Wir müssen sie schnell heilen. Sonst werden die Kinder einen brennenden Planeten erben.“ Hassan Noor, Save the Children Asia

93%

der unter 15-Jährigen atmen im Alltag gesundheitsschädlichen Feinstaub ein

Quelle: WHO 2018

3 ERFOLGE

Der Anteil der wegen Nahrungsmangel unterentwickelten Kleinkinder sank seit Jahrtausendbeginn von 33 auf 22%

Nur noch 150.000 Kinder infizieren sich jährlich mit HIV – gegenüber 520.000 Kindern im Jahr 2000

94% der Einjährigen in Europa sind gegen Diphtherie, Tetanus und Keuchhusten geimpft

3 RÜCKSCHLÄGE

Der Hunger kehrt zurück. 2020 waren rund 765 Millionen Menschen betroffen – geschätzt 118 Millionen mehr als 2019

Vier von fünf Kindern bewegen sich zu wenig. Die Pandemie hat das Problem noch verstärkt.

Fast jedes zweite Kind leidet an mindestens einer Allergie – Tendenz seit 50 Jahren steigend

Extreme Zukunft

Ohne starken Klimaschutz drohen heute Geborenen viel mehr Wetterextreme als ihren Großeltern



6,8 x
so viele
Hitzewellen



2,6 x
so viele
Dürren



2,8 x
so viele
Missernten



2,8 x
so viele
Flussüberflutungen



2 x
so viele
Waldbrände

23

DIE LAGE DER KINDER II

Bildung & Menschenrechte

Gute Bildung ist die beste Voraussetzung für ein gutes Leben – und nur zuvor konnten so viele Kinder zur Schule gehen. Jedenfalls gab das, bis die Pandemie Millionen von ihnen ins Homeschooling zwang. Bei den Kinderrechten, 1989 per UN-Konvention zum globalen Ziel erklärt, gibt es Fortschritte – denn jedoch schwere Verstöße vor allem in Ländern mit bewaffneten Konflikten gegenüber

Mangel an Grundbedürfnissen

Zwei haben sich Mangelernährung und Mangel an sauberem Wasser – durch verschärfte Folgen von Klimawandel und Konflikten verschärft



42%

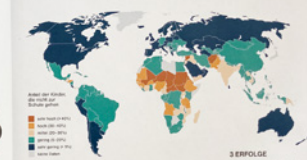
der 82,4 Millionen Menschen, die weltweit auf der Flucht sind, sind jünger als 18 Jahre

80

Millionen Kinder haben Hungergefahr. Im Jahr 2020 waren 150 Millionen Kinder betroffen

Schule ist für alle die Welt über

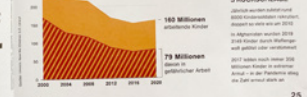
In vielen Teilen Afrikas, aber auch in Europa und Lateinamerika, werden Kinder keine reguläre Schulpflicht haben und Schulbesuch



3 ERFOLGE
Der Anteil der mangelernährten Kinder weltweit sank von 2012 um 10% auf 17%.

In Afghanistan sind heute 30% der Kinder mangelernährt. Vor 10 Jahren waren es noch 47%.

Millionen Kinder schufen
Der Hunger der Kinderwelt wird der Jahrhundertwende



3 RÜCKSCHLÄGE
Jahresanfang 2020: 150 Millionen mangelernährte Kinder. Ende 2020: 179 Millionen mangelernährte Kinder. In Afghanistan werden 2020 30% der Kinder mangelernährt. Vor 10 Jahren waren es noch 47%.

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Millionen Kinder schufen
Der Hunger der Kinderwelt wird der Jahrhundertwende

150 Millionen mangelernährte Kinder

79 Millionen Kinder in extremer Armut

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150 Millionen mangelernährte Kinder

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Greenpeace magazin

For the December 2021 issue on children of the Greenpeace Magazin (Germany) we created a series of maps, charts and icons, visualising and illustrating relevant statistics and facts on the topics Environment & Health and Education & Human Rights.

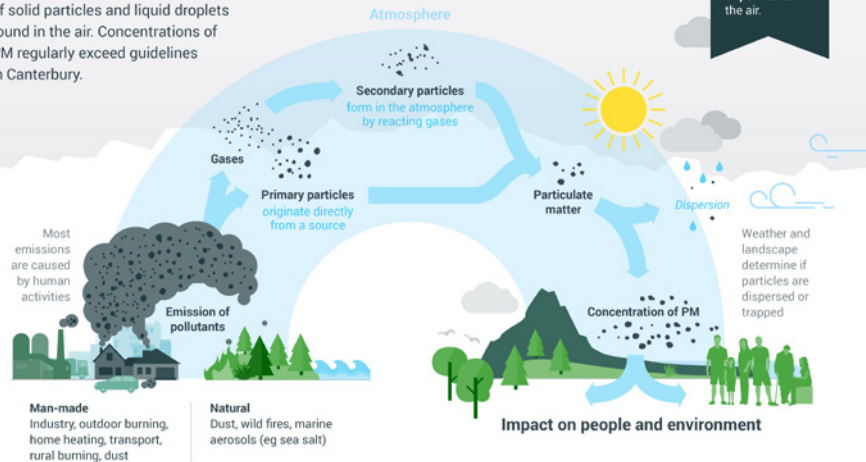
Client

Greenpeace Media GmbH

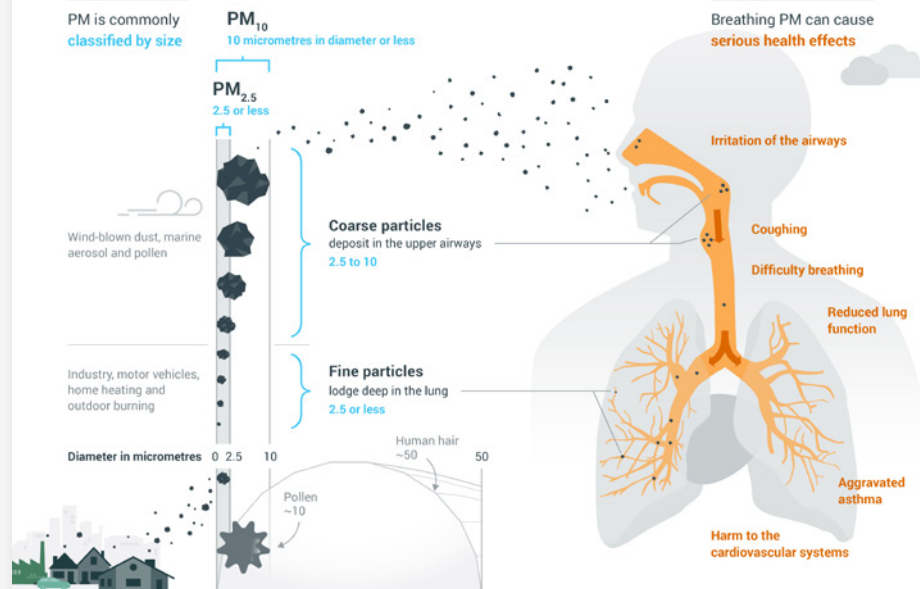


Understanding Air Quality in Canterbury

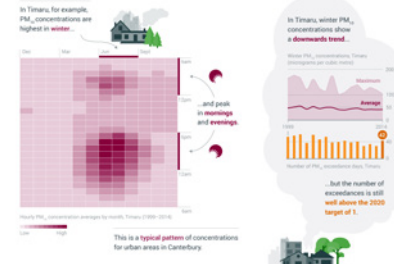
Particulate matter (PM) is a mixture of solid particles and liquid droplets found in the air. Concentrations of PM regularly exceed guidelines in Canterbury.



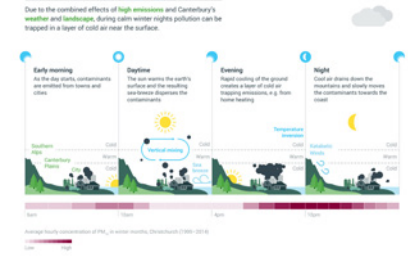
Particulate matter (PM) and health effects



Evaluating concentrations

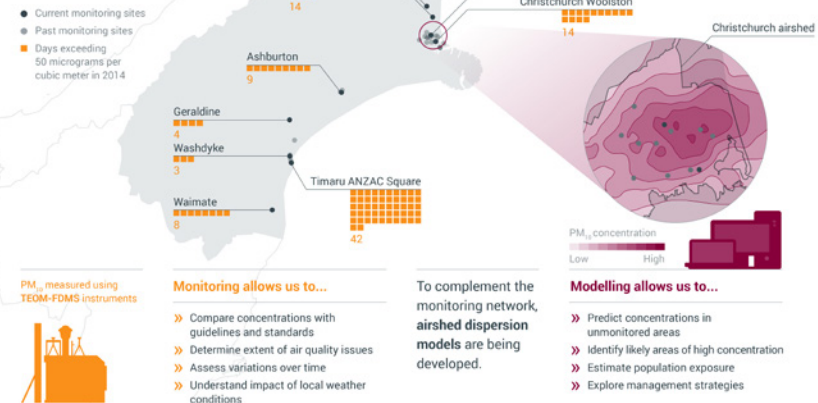


Effects of weather and landscape



Monitoring air quality

Environment Canterbury monitors concentrations of various contaminants. PM₁₀ is currently measured at 9 locations across the regions.



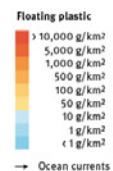
Understanding Air Quality in Canterbury

We created a modular infographic to accompany the release of Environment Canterbury's revised Air Plan.

Client
Environment Canterbury

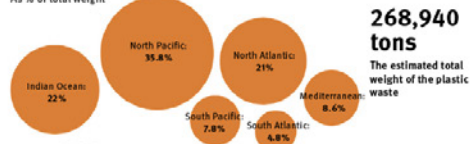
Soup of plastic

Countless tons of waste float on the surfaces of the oceans with devastating consequences for the environment.



An international team coordinated by the Californian institute 5 Gyres has developed a model to evaluate the density of microplastic floating in the ocean.¹ Based on 24 sampling and visual information campaigns between 2007 and 2013, this very conservative estimate must be considered a minimum.

Most affected: the North Pacific
As % of total weight

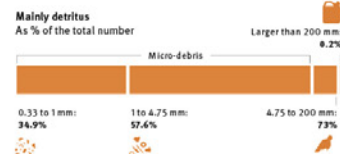


268,940 tons

The estimated total weight of the plastic waste

5.25 trillion

The number of pieces of floating plastic waste



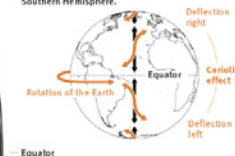
A legal no man's land

"On a global level, there is no adequate legal framework for the fight against plastic pollution" says Thomas Cottier, Professor of European and International Economic Law at the University of Bern. "The high seas belong to nobody. National legislation is often poorly applied and varies from country to country".

To minimise the distortion of the oceans' surfaces, this map uses an interrupted Mollweide projection, centred on the Pacific.

Coriolis force

Currents rotate in a clockwise direction in the Northern Hemisphere and anticlockwise in the Southern Hemisphere.



A Swiss expedition to probe the oceans

The Race for Water Foundation, based in Lausanne, is dedicated to preserving water and has launched a scientific expedition to study plastic pollution. A race catamaran left Bordeaux, France, on 15 March 2015 to visit the five oceanic gyres in 310 days. "Samples will be taken from the 12 island beaches most exposed to floating waste, including Easter Island, the Mariana Islands and the Azores", says Florian Faure, a researcher at the Central Environmental Laboratory of EPFL, where the samples will be analysed. The study will be supplemented by three-dimensional cartography of the coastal zones and the waste using a Sensefly drone, made by the Swiss start-up of the same name.



Infographic: Benjamin Bollmann.
Graphics and visuals: Dumpark.
1 Source: M. Eriksen et al., Plos One, 2014
2 Source: J.R. Jambeck et al., Science, 2015

The life of a piece of waste

1. Leaving land

Plastic is taken from land to sea by wastewater, rivers and the wind or is thrown directly into the ocean from ships.

2. Fragmentation

Over the years, plastic breaks down into pieces under the effects of ultraviolet radiation and the force of the waves. But it doesn't break down completely.

3. Threatening animals

Birds, whales and also tortoises are some of the species that ingest plastic, which sometimes obstructs their stomachs and kills them.

4. Toxic sponges

The microplastic absorbs organic pollutants in the seawater, e.g. pesticides, which further poison wildlife.

5. Concentration

There is no such thing as the 'plastic continent' – it's just a myth. Above all, pollution is comprised of detritus suspended below the surface, sometimes as deep as 30 metres.

6. Where does the plastic go?

It is estimated that the mass of plastic carried from land into the oceans every year is in the region of 8 million tons, in other words 30 times more than the observable quantity of floating waste.²

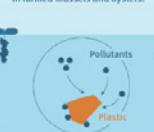
7. Sinking to the bottom

The plastic can become hidden in the sediment of the seafloor. Once it is colonised by microorganisms it becomes denser and eventually sinks.

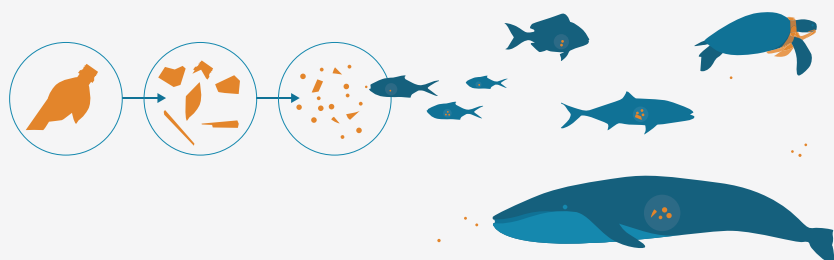
8. Freezing

Another hypothesis is that a large portion of it may be trapped in Arctic ice.

Traces of plastic have been found in farmed mussels and oysters.



For example, the Bordeaux ship 4.2 tons of plastic into the Black Sea every day, particularly in the form of industrial pellets.



Soup of plastic

This infographic was developed in partnership with Benjamin Bollmann for the Swiss National Science Foundations research magazine Horizons and was released in English, German and French.

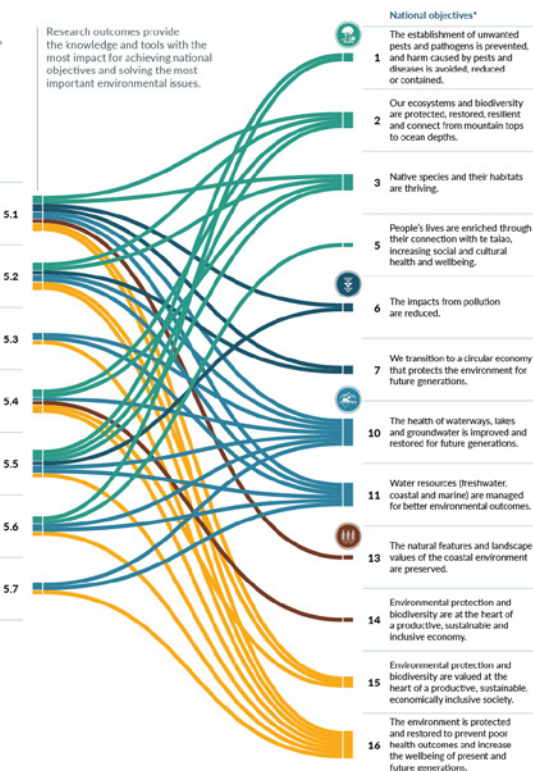
Client

Benjamin Bollmann / Swiss National Science Foundation

Research outcomes provide the knowledge and tools with the most impact for achieving national objectives and solving the most important environmental issues.



- We have improved understanding of how to integrate land and water use to improve water quality from source to sea.
- We have improved understanding of the impacts of changes to surface and groundwater quantity, and can manage for multiple uses and values.
- We have improved understanding of the impacts of poor water quality on human health and have tools to minimise them.
- We have improved understanding of the impacts of physical changes we have made to waterways and have tools to manage them.
- Whānau, hūpā and iwi have improved understanding of the uses of things taiao to improve freshwater and marine health.
- We have improved understanding of how to increase cultural, social and spiritual values, by improving freshwater and marine management.
- We have improved understanding of groundwater and its relationship with surface water, and have tools to manage it.



National objectives*

- 1 The establishment of unwanted pests and pathogens is prevented, and harm caused by pests and diseases is avoided, reduced or contained.
- 2 Our ecosystems and biodiversity are protected, restored, resilient and connect from mountain tops to ocean depths.
- 3 Native species and their habitats are thriving.
- 5 People's lives are enriched through their connection with the tiao, increasing social and cultural health and wellbeing.
- 6 The impacts from pollution are reduced.
- 7 We transition to a circular economy that protects the environment for future generations.
- 10 The health of waterways, lakes and groundwater is improved and restored for future generations.
- 11 Water resources (freshwater, coastal and marine) are managed for better environmental outcomes.
- 13 The natural features and landscape values of the coastal environment are preserved.
- 14 Environmental protection and biodiversity are at the heart of a productive, sustainable and inclusive economy.
- 15 Environmental protection and biodiversity are valued at the heart of a productive, sustainable, economically inclusive society.
- 16 The environment is protected and restored to prevent poor health outcomes and increase the wellbeing and present and future generations.

*Only national objectives connected to priority research outcomes are included here

Themes

- Healthy waters
 - Thriving nature
 - Reducing our impact
 - Resilient land systems
- National objectives relating to all themes
 - Socio-economic
 - Health and wellbeing

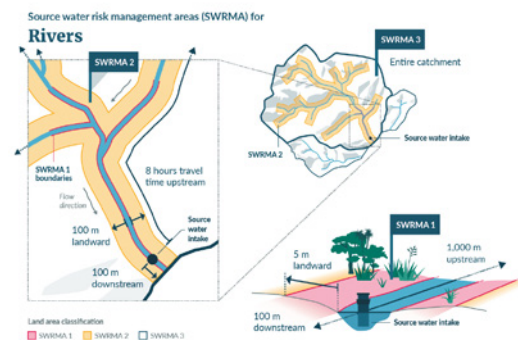


Figure 1 is a map of the study area, showing the location of the source water intake and the 100 m buffer zone. The map includes the entire catchment area, the river network, and the location of the source water intake. A 100 m buffer zone is shown around the intake, and a 5 m radius is indicated for the source water intake. The map also shows the location of the SWRMA 1, SWRMA 2, and SWRMA 3.

The image contains three cross-sectional diagrams of river channels, each showing the relationship between the riverbed, banks, and floodplains.

- Single channel river:** This diagram shows a single, deep channel with a flat riverbed. The water is labeled "Normal flow" in the center and "Fuller flow (without overtopping riverbanks)" at the edges. The banks are labeled "Bank", and the areas on either side are labeled "Floodplains". A double-headed arrow at the bottom indicates the "Riverbed" width.
- Braided river:** This diagram shows a river with multiple channels separated by small islands or bars. The water is labeled "Normal flow" in the center and "Fuller flow (without overtopping riverbanks)" at the edges. The banks are labeled "Bank", and the areas on either side are labeled "Floodplains". A double-headed arrow at the bottom indicates the "Riverbed" width.
- Single channel river with stopbanks:** This diagram shows a single channel with high, straight banks. The water is labeled "Normal flow" in the center and "Fuller flow (without overtopping the natural bank)" at the edges. The banks are labeled "Bank", and the areas on either side are labeled "Floodplains". A double-headed arrow at the bottom indicates the "Riverbed" width.

Identify value systems

Identify the freshwater values and downstream receiving environments that are important to the system. These values include the natural and cultural values that are important to the system (e.g., biodiversity, recreation, aesthetics, etc.).

Select attributes

Select attributes to best represent values of the system (e.g., water quality, water quantity, etc.).

Set indicator criteria

Set indicator criteria for the attributes. These criteria should be based on the values of the system and the attributes that are important to the system.

Address nutrient outcomes

Address the nutrient outcomes that are important to the system. These outcomes should be based on the values of the system and the attributes that are important to the system.

Figure 1: A diagram illustrating the components and metrics of freshwater systems.

The diagram is divided into several sections. At the top, a landscape illustration shows various components: Rivers, Wetlands, Freshwater biota, Mountains, Forests, Agriculture, Urban, and Industrial. Below this, a circular diagram shows the flow of these components into a central 'Freshwater systems' hub. The bottom section is a table with four columns: Identify value, Select attributes, Set indicator criteria, and Address nutrient outcomes. Each column contains a numbered step, a description, and a corresponding icon.

Identify value	Select attributes	Set indicator criteria	Address nutrient outcomes
1. Identify value systems that may be compromised by freshwater nutrients	2. Select attributes to best represent values of the system (e.g., water quality, water quantity, etc.)	3. Set indicator criteria for the attributes. These criteria should be based on the values of the system and the attributes that are important to the system.	4. Address the nutrient outcomes that are important to the system. These outcomes should be based on the values of the system and the attributes that are important to the system.
Identify value systems Identify the freshwater values and downstream receiving environments that are important to the system. These values include the natural and cultural values that are important to the system (e.g., biodiversity, recreation, aesthetics, etc.).	Select attributes Select attributes to best represent values of the system (e.g., water quality, water quantity, etc.).	Set indicator criteria Set indicator criteria for the attributes. These criteria should be based on the values of the system and the attributes that are important to the system.	Address nutrient outcomes Address the nutrient outcomes that are important to the system. These outcomes should be based on the values of the system and the attributes that are important to the system.

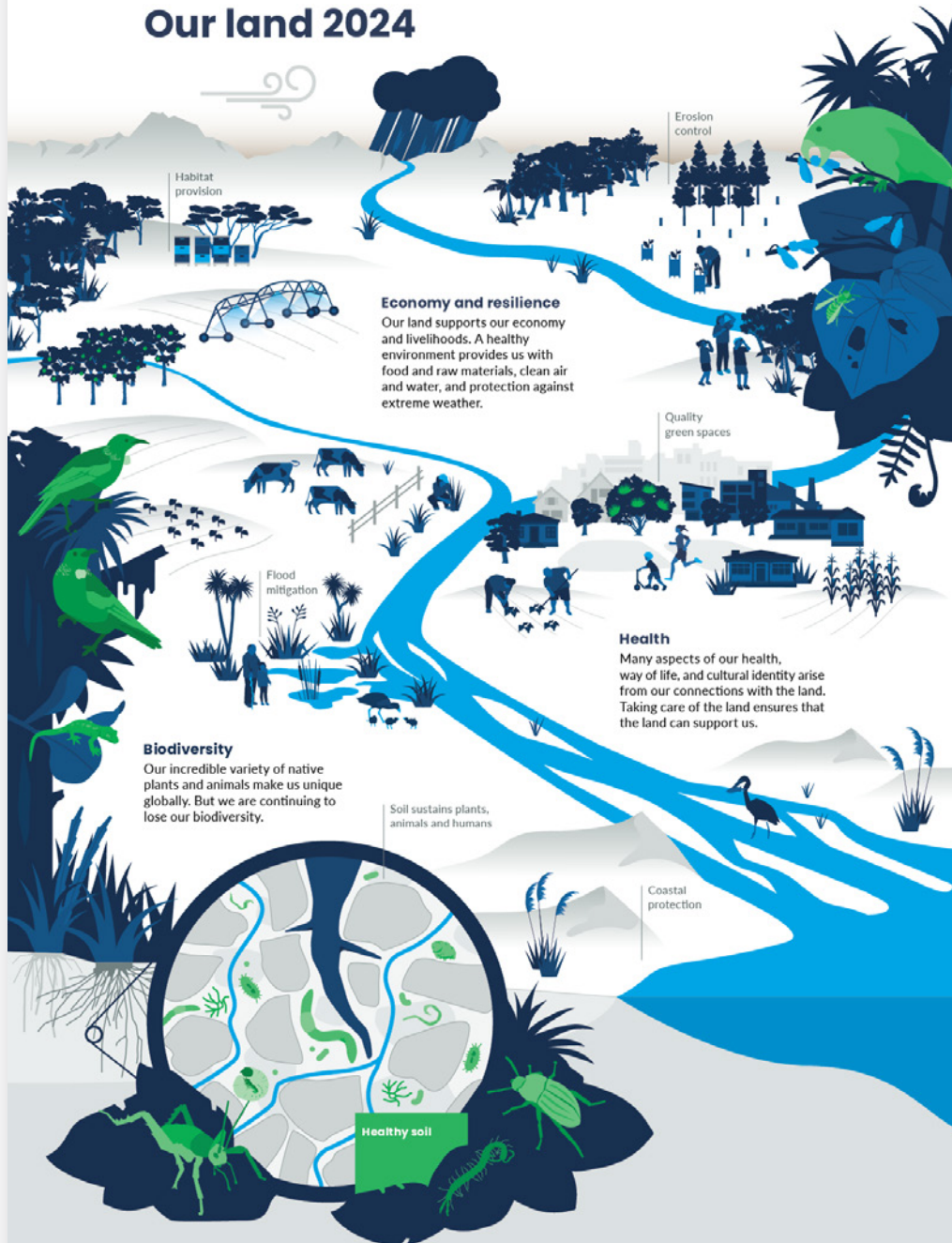
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We created a variety of explanatory graphics for guidance and consultation publications released by the Ministry for the Environment.

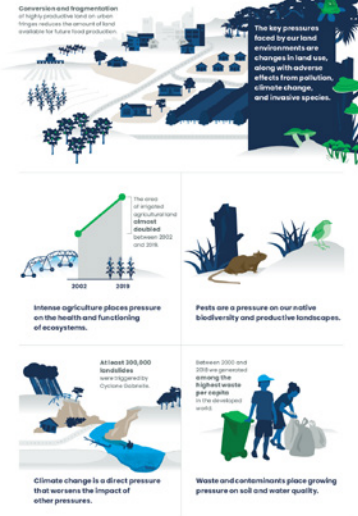
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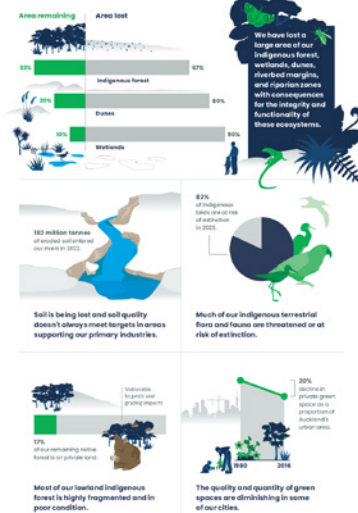
Our land 2024



Pressures on our land



State of our land



Impact on our land



Our land 2024

Multiple infographics for the environmental reporting series.

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Ministry for the Environment –
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Web

[Our land 2024](https://www.mfe.govt.nz/publications/our-land-2024)

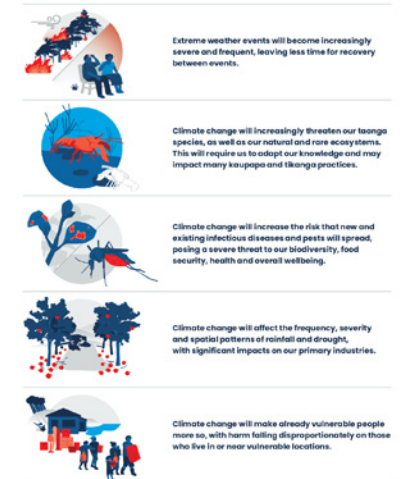
Our climate, our biodiversity, our future



Impacts on biodiversity, and our cultural, social and economic wellbeing



Outlooks



Our atmosphere and climate 2023

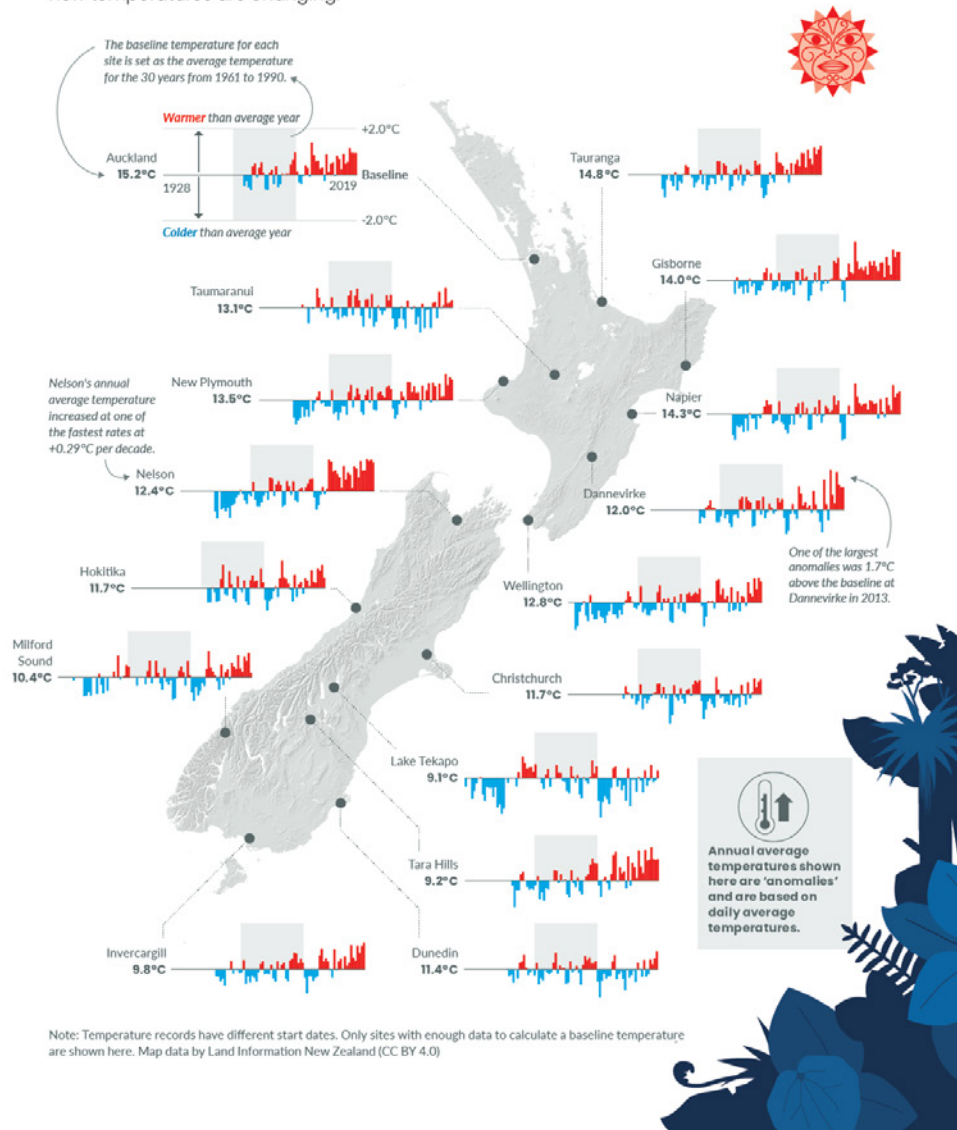
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Web
[Our atmosphere and climate 2023](https://www.mfe.govt.nz/publications/our-atmosphere-and-climate-2023)

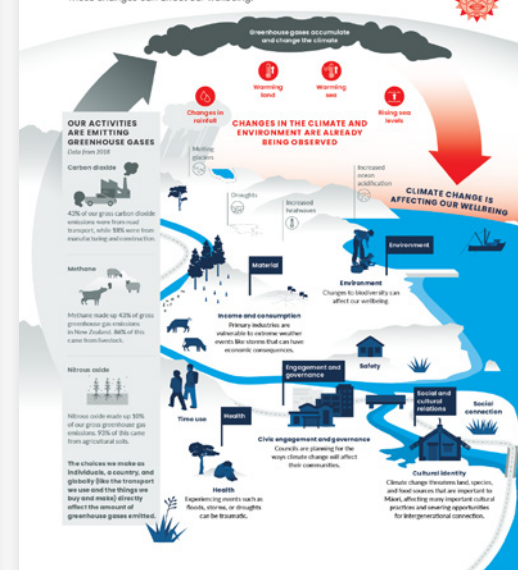
► Average temperatures across New Zealand are increasing

Comparing annual average temperatures with the average for 1961–90 shows how temperatures are changing.



► Our changing climate

The greenhouse gases we emit are changing the climate and our environment. These changes can affect our wellbeing.



► Māori identity and wellbeing is threatened by climate change

Te whenua, te wai, and taonga species are being affected by climate change, which threatens traditional practices connected to Māori identity and wellbeing.



Our atmosphere and climate 2020

Multiple infographics for the environmental reporting series.

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[Our atmosphere and climate 2020](https://www.mfe.govt.nz/publications/our-atmosphere-and-climate-2020)

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