



Source

Business & Marine Resources Day Zero Toolkit

An overview

Aim: This guide provides you with the essential business-marine concepts & frameworks you need to start taking action today.

This toolkit will:

- Outline key marine-resources-in-business related concepts
- Introduce marine resources related risks & impacts
- Provide examples of business-marine-resources interfaces across a value chain
- Provide a high-level framework for locating & assessing marine resources impacts across your value chain

Business & marine resources

All businesses rely on marine resources even if they don't use these resources in their value chains.

Marine resources are any resources from the **coastal & marine environment**.

Marine resource **inputs and impacts** are **often hidden within supply chains** and manufacturing processes that businesses do not see.

From the subsea cabling powering our internet, to the processing of the minerals in all our electronic devices; **there isn't a business on the planet, that doesn't impact the ocean.**

As our societies and businesses consume more and more products & services, the **pressure on marine resources is mounting.**

This pressure comes from the **direct need** for **greater quantities** of these resources and **indirect business impacts on the ocean**, and the fauna and flora within it.

Businesses have a **responsibility to address these impacts.**

Many supply chains are more marine intensive than we might think...

40% of all fish caught is **bycatch**. Every year this includes:

- 300,000 whales & dolphins
- 85,000 turtles
- Up to 1,000,000 sharks and rays



90% of **marine fish stocks** are either fully exploited or **overexploited**.



80% of **municipal wastewater** is discharged into water bodies **untreated** causing ocean **dead zones** & killing coral reefs.



Every year **30,000 whales** are **killed** or injured **by shipping vessel collisions**.



Agricultural pollution is the largest cause of **eutrophication & contamination** of coastal waters.



16-35% of **microplastics** released into oceans are from **synthetic textiles**.



Per year, **40 - 50 billion tons** of **estuarine sand** are mined for the construction sector.

This level is **unsustainable**.



Every year **300 - 400 million tonnes** of **toxic industrial waste** are dumped into the world's waters.



Why should you care?

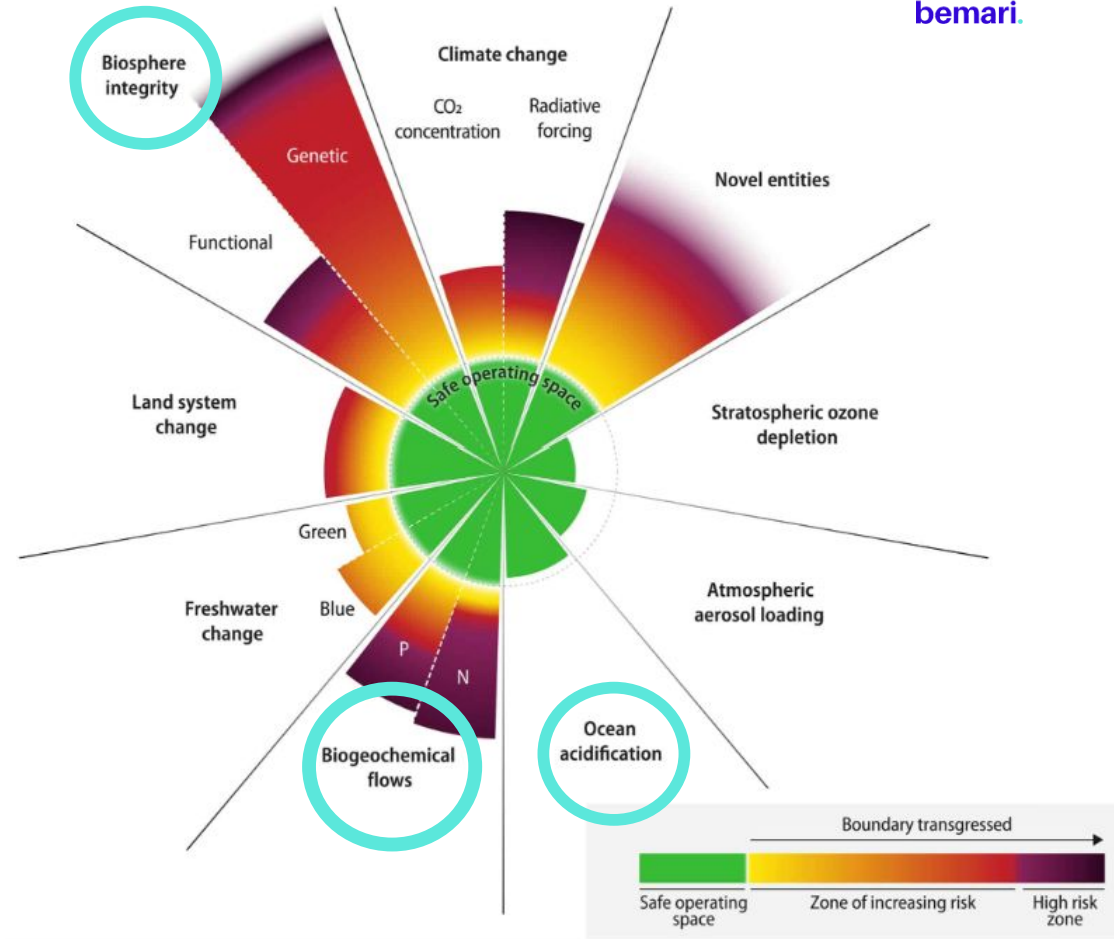
9 reasons:

We have **breached 7 out of the 9 planetary boundaries** considered necessary for our survival.

Marine resource depletion is included in three breached boundaries:

- Biosphere integrity
- Ocean acidification
- Biogeochemical flows

Businesses have a pivotal role to play to get the planet back into a **“safe operating space”**.



What are marine resources?

Marine resources are any resources (living or non-living) that are found in **the ocean**.

These include:

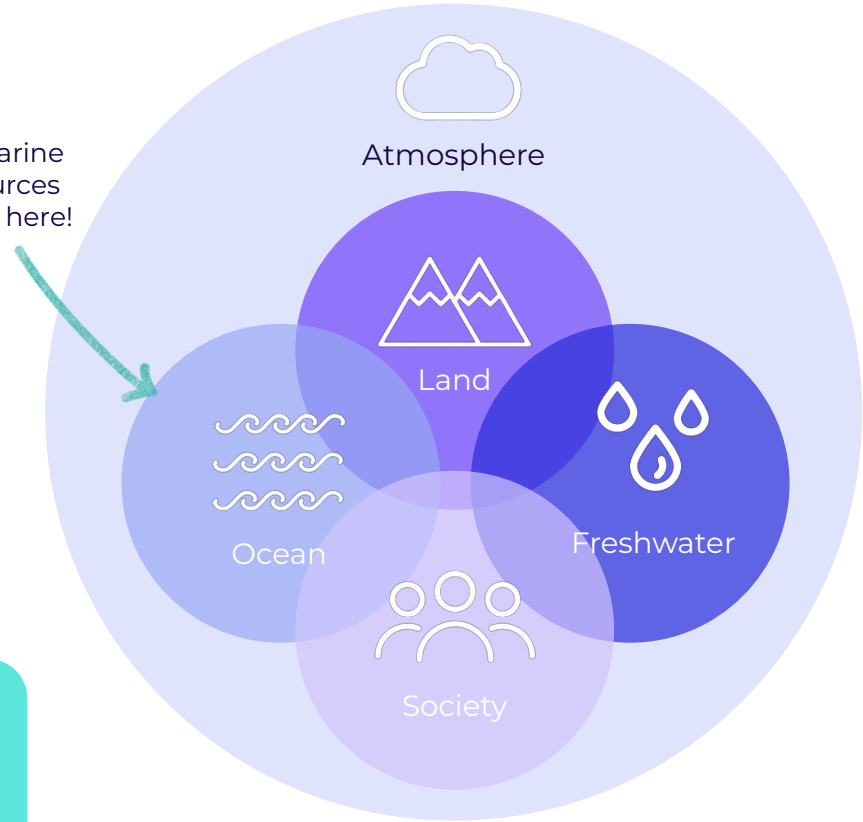
- Marine plants & animals
- Aggregates (e.g. sand)
- Coastal & marine acreage

Remember: there is one global ocean

At school we're taught that there are five oceans: the Atlantic, Pacific, Indian, Arctic and Southern (Antarctic). Actually, the ocean is one single continuous body of water and it covers 71 percent of the Earth.

The idea of 'separate' oceans is a political and cultural construct. In reality, we have just one global ocean which is a continuous circulation of currents around the world.

All marine resources found here!



Marine resources are part of nature, but what is nature?

Each realm comprises of biodiversity & ecosystems - these are the building blocks of the natural world. These building blocks provide all the resources we use in our supply chains.

'Ecosystem services' is the collective term for all the benefits nature provides to businesses & society.

Biodiversity

All organisms and resources on the planet.

This includes all plants, animals, air, water, soil, minerals etc.

Ecosystem

A community or group of living organisms that live in and interact with each other in a specific environment.

E.g. a mangrove, an estuary, a coral reef, sea ice [etc.](#)

An ecosystem can also be 'human-manipulated' meaning it has been created by people. E.g. coastal urban developments e.g. ports or hotels

Ecosystem Service

The benefits or 'services' that ecosystems provide to people.

E.g. gravel, food, fibre, pollination & water regulation



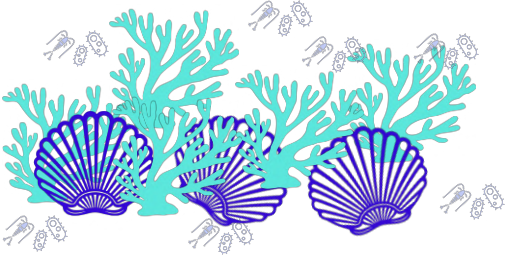
Seagrass



Plankton



Scallop

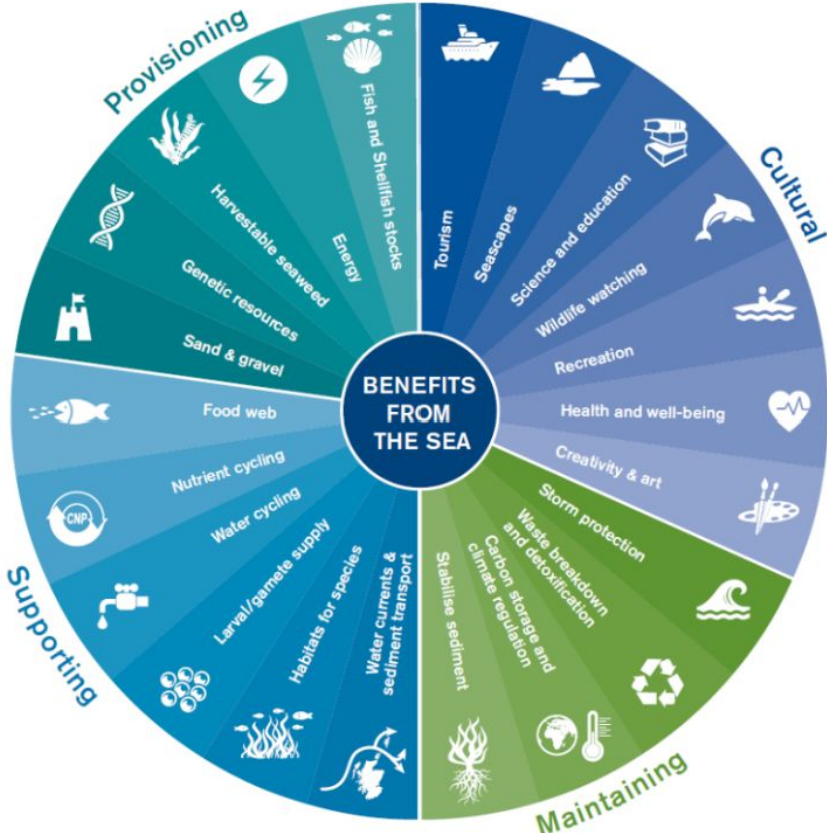


Coastal seagrass bed



Scallops for consumption

Ecosystem Services come in many forms. They can provide both direct and indirect services to businesses. Below are examples of ecosystem services from the sea.



How does your business interface with marine resources?

Marine resources are used **directly** as **inputs** across businesses value chains.

Marine resources are also **directly and/or indirectly impacted** by businesses activities across value chains.



See the following slides for examples across the value chain.

Every business relies on marine resources...

Even if the usage occurs deep in its supply chain.



Whilst **business inputs** are the most obvious business-marine resource interface, it's important to remember:

- **The location** at which business activities occur **counts as a marine interface** (if in the ocean or by coast)
- As do any **business externalities** that interact with the marine environment e.g. pollution.

For example...

Business Inputs

All marine inputs. Examples include:

- **Aquaculture commodities for human consumption** (wild & farmed) e.g. salmon, prawns & shellfish
- **Aquaculture commodities for livestock & fish farm consumption** (wild & farmed)
- **Metal, minerals & aggregates** (e.g. gravel & sand) to build offices, machinery & digital devices
- **Petroleum, coal & natural gas** to make plastic products, components & packaging & to run our national grids & internet.



Business Activity Location

The coastal land ecosystems converted and/or disturbed to:

- Grow agricultural & aquacultural commodities
- Mine minerals & metals
- Build ports, factories, warehouses, logistics infrastructure & offices

The marine ecosystems altered and/or disturbed to:

- Extract oil, gas & metals etc.
- Lay undersea cabling for global communication networks e.g. internet & phone lines
- Run global shipping lanes
- Farm & wild catch fish for human & livestock consumption

Business Externalities

Intentional externalities:

- Releasing untreated (or insufficiently treated) wastewater into water bodies
- Allowing nutrient run-off to enter waterways
- Creating products with components destined for landfill (which may leach plastics into waterways & out to sea)
- Creating plastic products which are likely to create both solid and microplastic waste

Unintentional externalities:

- Light pollution from fishing boats & port warehouse security lighting and offices
- Acoustic pollution from shipping sonar

Product-based business: Example of marine resources interfaces in a cosmetics value chain

It is important to first **identify the marine resources interfaces** within a supply chain.

After this is complete, you can start to **evaluate impacts**.

Below is an example of nature interfaces for a **face cream with marine ingredients (seaweed & marine collagen)**.

Interface

Primary commodities sourcing



Ocean acreage for fishing



Wild caught fish for collagen

These are needed in fish farming & include fish food (e.g. soya & wild caught fish)*

Aquaculture inputs for fish farms



Coastal acreage for seaweed farm



Cultivated marine crop e.g. seaweed

Commodity & product manufacturing



Coastal land acreage for processing facilities & ports



Metals & aggregates in machinery inc. digital components



Sand: glass packaging

Petroleum: plastic packaging

Logistics & transportation



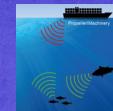
Coastal & sea acreage for logistics infrastructure



Invasive species intro. e.g. accidentally on hull of logistics ship



Light pollution e.g. port warehouse security lighting



Acoustic pollution e.g. shipping sonar

Consumer



Incineration or landfill of non-recyclable / single use packaging

* Wild caught fish are hunted from wild stocks in the ocean e.g. tuna & cod. Farmed fish are cultivated in fishing nurseries e.g. shrimp & salmon



Service-based business: examples of marine resources interfaces across value chains



Service-based business: Examples of marine resources interfaces across digital value chains

Services also rely on marine resources even if the interfaces aren't immediately obvious. Most services rely on at least electronic devices, data centres and the internet. All of these inputs require large quantities of ocean floor, minerals and water for production and operations. Here is an example of interfaces within a **digital services business**:



Marine resources business risks

When a business is dependent on a marine resource, it becomes vulnerable to any changes in the quality and quantity of that resource needed for production or waste management.

Here are some examples of marine resources risks for a business:

Reputational

Shift in customer perception

- Perception that specific inputs are unsustainable and/or irresponsible e.g. fish products

Negative shift in comparative perception

- Perception that competitors have a lower marine impact. E.g. use biodegradable, non-plastic packaging

Regulatory

Changes in laws and regulation on marine resource usage

- E.g. mandating a change in marine resource or ecosystem usage may reduce business access to the required quality and quantity

Operational

Changes in quantity

- Overexploitation may result in a reduced species population of key resources

Changes in quality

- Pollution may impact the quality of a resource, e.g. mussels polluted with certain waste pollution are poisonous

Financial

Increased costs due to any of the risks on the left

Loss of revenue due to supply chain disruption or loss of customers

Fines & litigation for breaching nature positive regulation



Marine Resources Impacts & Business

The impact of a business on nature is complex.

To begin exploring your business' relationship with water, start by asking yourself the following questions:

What are my marine resource impacts?

How significant are my marine resource impacts?



What are my marine resources impacts?

The five main ways businesses impact marine resources are by contributing to the following:

Habitat loss*

Overexploitation

Climate Change

Pollution

**Invasive
Species**



Examples of nature impacts in supply chains 1/2

Marine habitat fragmentation



Oil & Gas Extraction



Recreation & Tourism



Aggregate mining

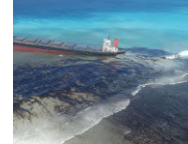


Aquaculture



Transportation

Pollution



Chemical Pollution



Physical Pollution



Noise Pollution

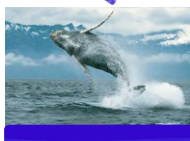


Light Pollution

Over exploitation

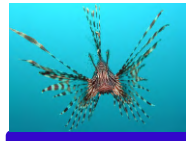


Overharvesting



Overhunting

Invasive Alien Species



Commercial Imports

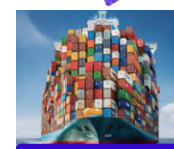


Accidental Introduction

Climate Change



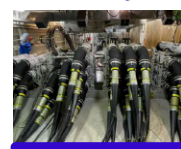
Construction



Transportation



Aquaculture



Coal powered undersea cabling



How significant are my impacts?

To start understanding the extent of your impacts, you need to understand the **quantity, quality & context** of the marine resources you are depending on. Below are some questions to get you started:



Quantity

- **How many** different marine resources is my business dependant on?
- What is the **quantity of each marine resource**?
- Is the **source sustainable** in the quantities I'm using?
- Is the **quantity** of marine resource I'm using **causing harm** to:
 - (i) the resources: population (if alive) or quantity (if not alive)
 - (ii) the ecosystem within which it's found
 - (iii) local communities
- What **quantity of pollutants** are being dumped into water sources, at what regularity and to the detriment of which marine species & ecosystems?



Quality

- Am I using a **high-quality marine resource** that others (people or wildlife) **need to survive** and/or thrive?
- Is my marine resource consumption **reducing the quality for others** (people and/or wildlife)?
- Is my **waste and end-of life management** ensuring that my business is not negatively impacting people and marine ecosystems?



Context

- Am I contributing to marine **biodiversity-stress** in the **locations of my supply chain**?
- Am I **contributing to coastal societal stress** through the use of resources?
- Am **reducing the climate resiliency** of coastal people and marine ecosystems through my marine resource use?



How to reduce nature risks & impacts

Nature Impact Approach.

We recommend the following 4 step approach when starting to engage with marine resources impacts across your value chain.

1

Locate your interface with marine resources

2

Evaluate your dependencies & impacts

3

Assess your marine resources related risks & opportunities

4

Prepare to respond to your risks & opportunities



Locate.

Firstly, you need to understand where in your value chain your business interfaces with marine resources.

1

Locate your
interface with
marine
resources

The following questions will help you to locate your marine resources interface:

- **Where** in your value chain are you **dependant on natural resources** from marine **ecosystems**?
- Where in your value chain are their natural resource **intensive activities** or **highly polluting activities**?
- **Is your resource usage located:** (1) within 5 miles of the coast (2) on or next to a freshwater body e.g. a river or lake

Example

A hotspot for an interface with marine resources is shipping. In support of low carbon transportation, many businesses are choosing to ship rather than fly their products.

Shipping lanes have never been busier and thus their marine impacts never greater, especially on cetaceans (whales & dolphins). Acoustic pollution from shipping sonar negatively impacts cetacean communication with each other, while shipping collisions account for 30,000 whale injuries or deaths per year.



Evaluate.

Once you've located your interfaces, you need to evaluate your dependencies & impacts. This step is critical for developing an objective understanding of your marine resources impacts.

2

Evaluate your dependencies & impacts

The following questions will help you to evaluate your dependencies and impacts:

- **What** are your **dependencies** on marine resources across your value chain?
- What are the **scale and scope** of your **dependencies**?
- **What quality & quantity** of marine resources or ecosystem services is your businesses **dependant on** for activities across your value chain?
- **What** are your **impacts** on marine resources across your value chain?
- What is the severity of your positive and negative **marine resources impacts**?
- Which impacts are **material**?



Assess.

Once you have quantified your impact and understand your dependencies, you need to understand how these translate into risks to your business.

3

Assess your
marine
resources
related risks &
impacts

The following questions will help you assess your marine resources related risks & opportunities:

- **What** are **risks arise** from your marine resources dependencies and impacts?
- **What risk management structures** are in place to mitigate these risks?
- **Which** risks and opportunities **are material** and should be **prioritised**?

Example

Squalene is a common ingredient in skincare & cosmetics. It is derived from sharks.

The use of shark squalene is a design decision, as there are vegan alternatives. As it's a design decision, a brand has control over whether to include squalene within its recipes or not.



Prepare.

Once you understand your risks, impacts & dependencies you need to put in place the governance, resources, risk management and metrics to reduce prioritised risks & impacts.

4

Prepare to
respond to your
risks & impacts

The following questions will help you prepare a response to your marine resources risks and impacts.

- What **governance structures** can you put in place to respond to marine resources risks & impacts?
- What **risk management structures** can you put in place to respond to your marine resources risks & impacts?
- What **targets and metrics** have you put in place to track the effectiveness of your risk & impact reduction activities?
- What **resources** have you put in place, financial and human, to deliver your identified risk & impact reduction activities?



What next?

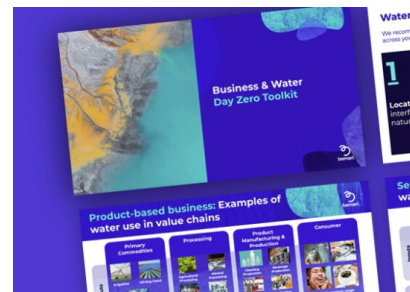


Download our Day Zero Water Toolkit

In addition to marine resources, it is important to consider the interconnected impact of business activities on **freshwater**:

- Globally, only 1,000 rivers are responsible for nearly 80% of marine plastic pollution
- Agricultural run-off & wastewater is the primary factor in the creation of 500 marine dead-zones (collectively covering an area greater than the UK)
- The majority of this pollution enters oceans via rivers.

To better **understand your freshwater impacts**, [download](#) our Day Zero Water Toolkit.



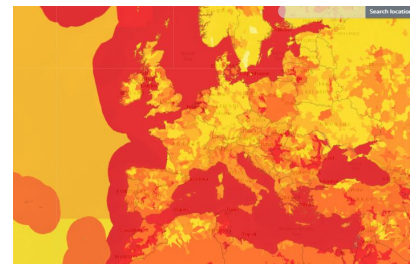
Join us for a Biodiversity Collage

Want to better understand the drivers of biodiversity loss? Our **three hour Biodiversity Collage workshop** helps you understand how your business contributes to nature loss, and the steps you can take to reduce your impact. Join our **interactive regular sessions** or [request a workshop](#) especially for your team.



Explore the WWF Biodiversity Risk Filter

The WWF [Biodiversity Risk Filter](#) includes a **marine screening tool** which can help you assess marine risk. This is very helpful for understanding where your **marine impact hotspots** are likely to be.



Thanks for reading.

Want to know more
and discuss how we
can help you?

Email us at
hello@bemari.co.uk -
we'd love to chat.

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