

The cross-cutting issues with Marine Strategy Framework Directive and Marine Spatial Planning

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The general context (from far away)

Everything is related to the interaction of Man with the natural environment



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Since the neolithic the interaction is characterized by the intertwining of two activities:

- 1. Utilization of natural resources**
- 2. Niche construction**

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(and for the sea we
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so)



Utilization of natural resources

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Later we learned how to cultivate the environment



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Niche construction

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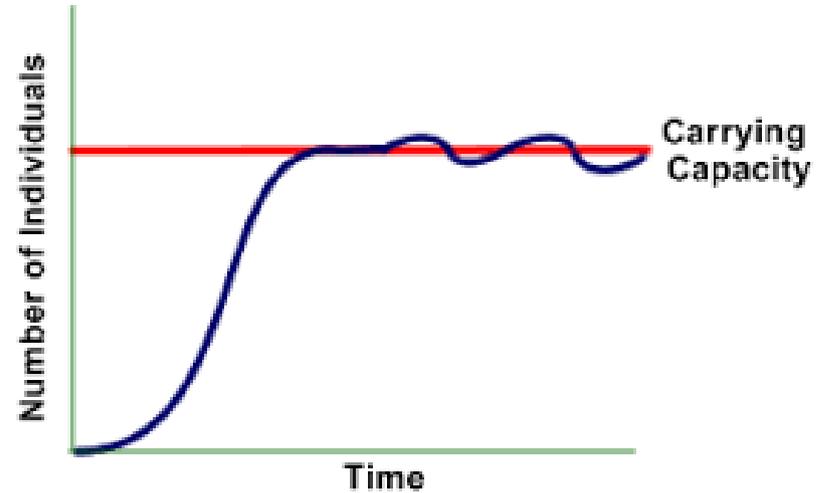


In fact Man is by far the most effective niche constructor in the evolution



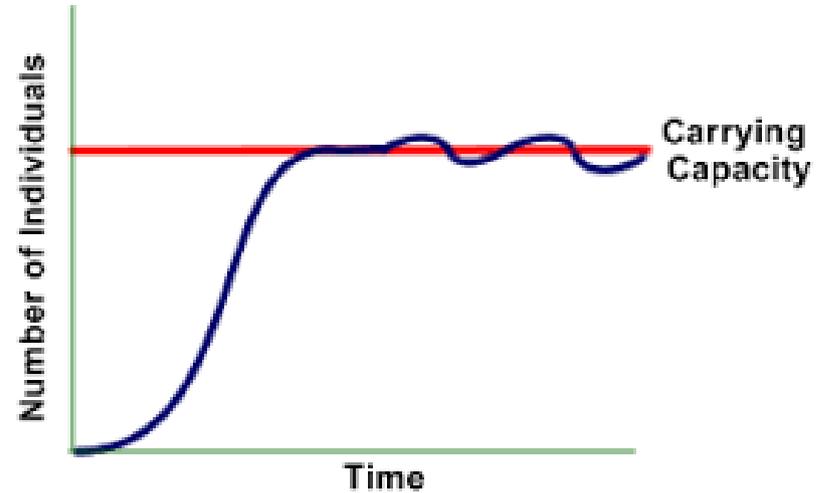
Carrying capacity

Pure exploitation of natural resources imposes an upper limit to population because of the carrying capacity of the systems

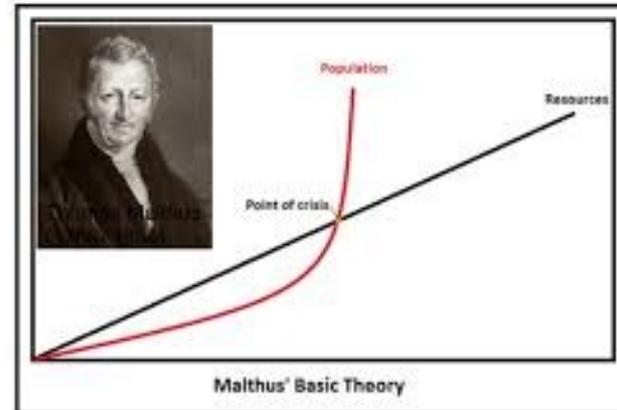


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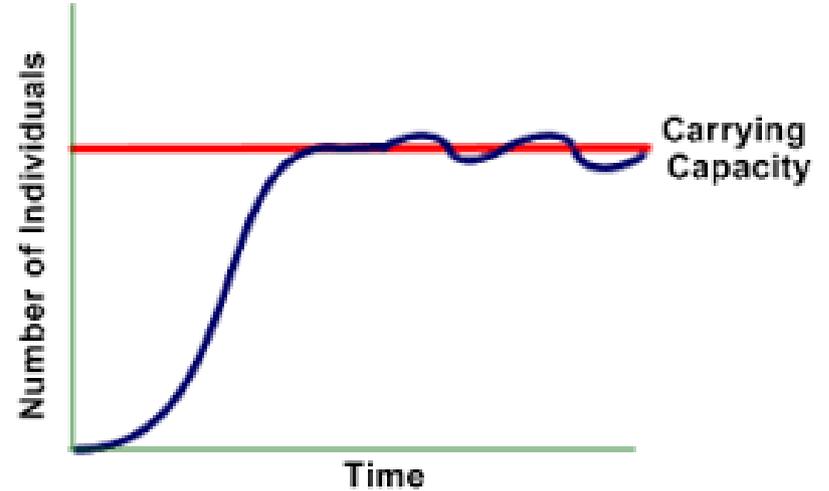


This was the basis of Malthus argument

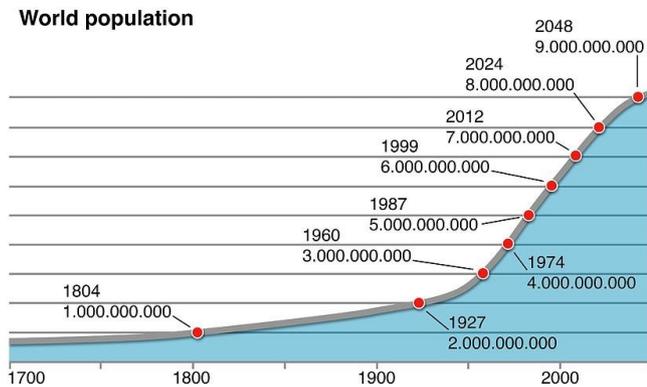
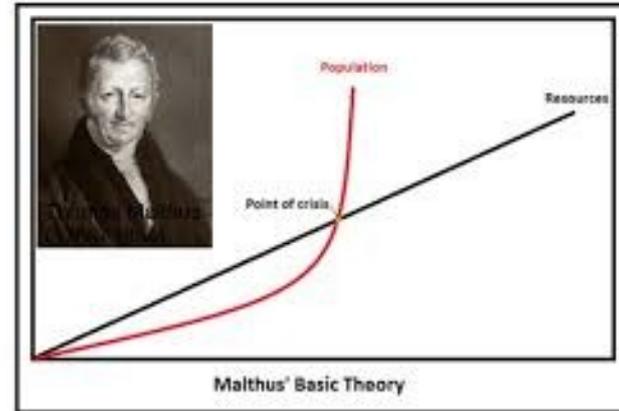


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In fact the prediction has been, at least postponed thanks to the niche construction

The drivers

From a biological point of view the scope is the survival of the individuals, groups etc.

From the point of the view of the societal functioning the driver is the economy:

economic drivers are behind societal and political dynamics

The conflicts

Economic drivers may lead to conflicts within groups, regions, states, which do not find a political solution, then we have wars



War is merely the continuation of policy by other means.

The consequences

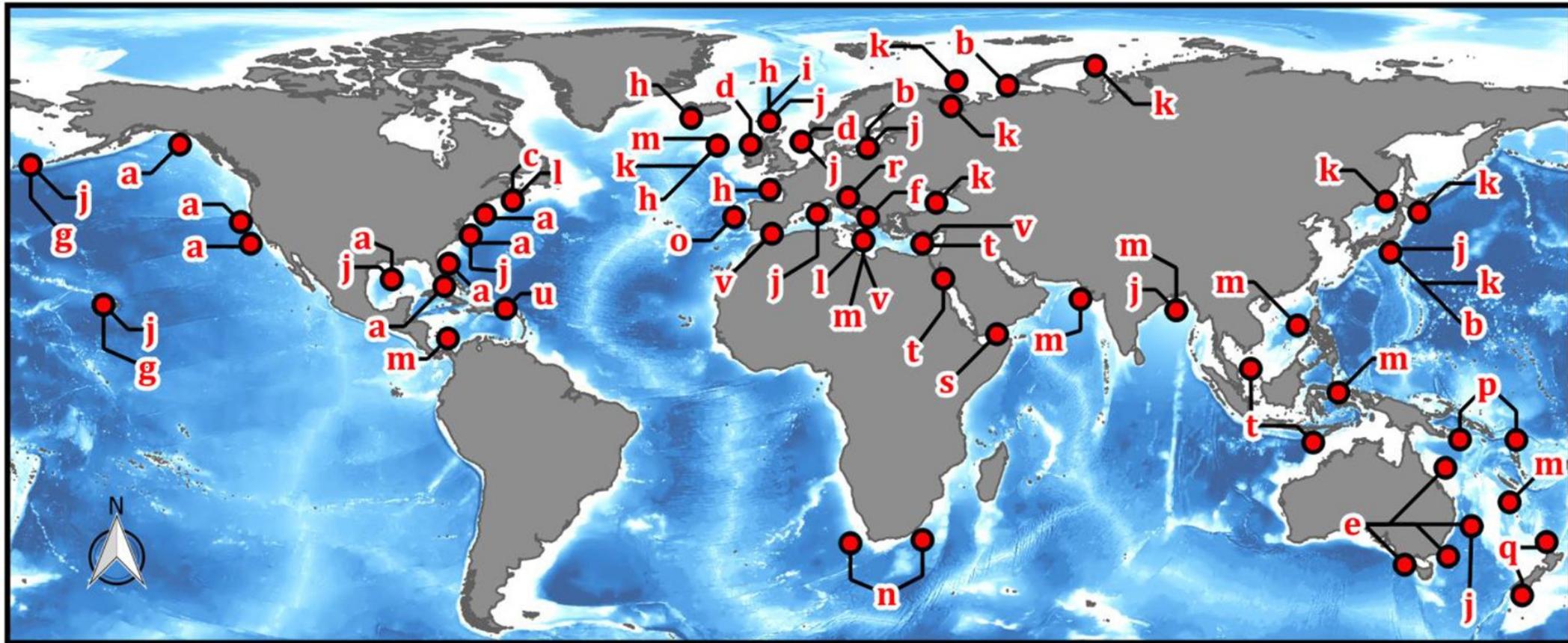
The status of each human aggregation is evaluated in terms of economic and military power, one feeds back on the other →

the production of weapons is a persistent trait of our societies. They serve as **deterrent** or to **destroy the enemy's niche**, thus causing economic damage to it

They are also part of the economic activity by themselves

All the above implies:

- overproduction and under-use
- obsolescence
- **need of disposal**



Global distribution of documented marine sites with munitions present (includes conventional weapons, chemical weapons, and UXO).

Knowledge gaps and remedies

That solution has been prevalently determined by

Knowledge gaps

and

Lack of long term vision

long term effects are

hidden, underestimated, unexpected

decisions, rules, directives, policies are generally ex-post

It is unlikely that drivers will change in a short time, if any

The only way to prevent the continuation of the same practice, is to count again on the competing economic drivers

On going initiatives

MSFD



On going initiatives

MSP

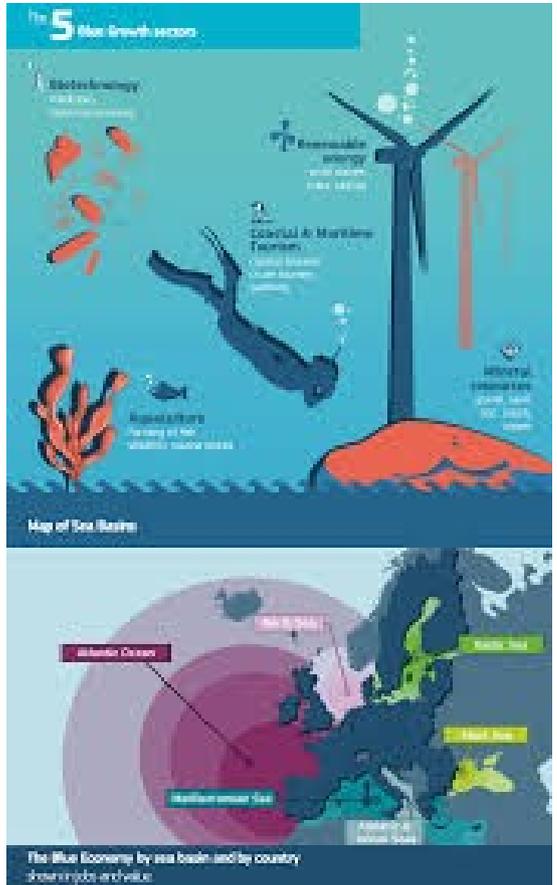


MSFD

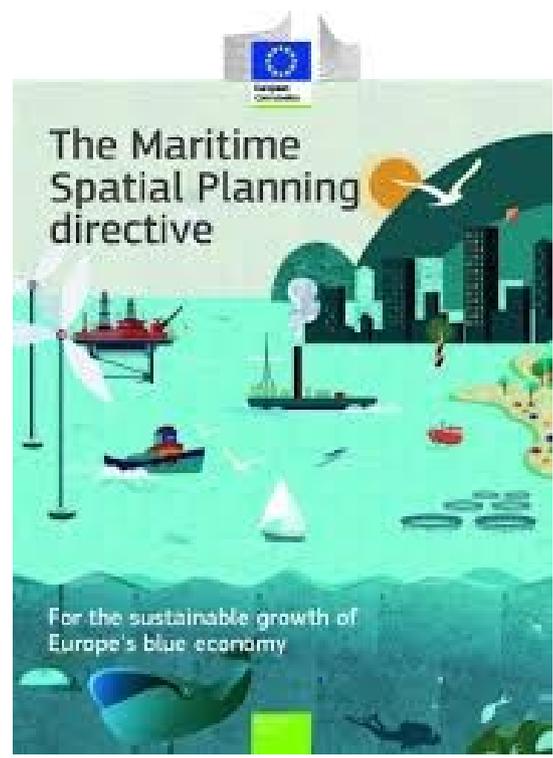


On going initiatives

Blue Growth



MSP



MSFD



The ideal scenario

Directives and policies would be successfully implemented but:

The presence of ammunition conflicts with:

(6) Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

(8) Concentrations of contaminants are at levels not giving rise to pollution effects.

(9) Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.

(10) Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

MSP aims at preventing conflicting uses:

Weapon disposal has been an *ante litteram* conflicting use

Blue Growth relies on the marine space often in the critical areas

An encouraging view

- The risk to the marine environment from chemical munitions dumped in the seas is relatively low.
- However, continuing threats to marine-based occupations continue, predominantly involving individuals engaged in fishing, deep-sea dredging and similar occupations.
- Mechanical disturbances to the ocean floor in an area potentially contaminated with chemical munitions are of concern (e.g., sand and gravel excavation, pipe building, cable-building for submarine and other communications, drilling and other activities of the oil and gas industry, and scientific research expeditions).
- Terrorist recovery and re-weaponization of chemical agents is a remote possibility.

With caveats and recommendations

- As technology allows deeper scuba-diving, sport divers exploring ship wrecks may be at increased risk of contact with chemical munitions.
- To date most authorities recommend leaving previously sea-dumped munitions in place and undisturbed.
- Public health notifications to marine workers as well as the public at large are encouraged to promote appropriate avoidance of risks related to sea dumped chemical munitions.

Are there alternatives?

MSFD, MSP and Blue Growth have been designed in a long term perspective

The main motivation is again economic:

Environment deterioration causes, on medium and long term, an economic loss because of:

Degradation of ecosystem services

Impact on human health

Building test cases

Leveraging on this

A case-by-case approach where cost-to-benefit ratios are evaluated with an unbiased approach can be envisioned

It may be favored by technological advancements

But requires the development of proper metrics needed to predict the long term impact on the provision of ecosystem services