



‘The Sustainable Marine Ecosystem’ – A Longing Awaital For Legal Dawn

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Abstract

Sustainability consists of fulfilling the needs of current generations without compromising the needs of future generations. The same thrives on by striking a balance between economic growth, environmental care and social well-being. Brundtland Report defines the concept of Sustainable development as development which meets the needs of the present without compromising the ability of the future generations to meet their own needs. This article focuses on the challenges to the sustainability of fisheries due to sea-level rise, acidification and changes in salinity, precipitation, groundwater and river flows, extreme weather events and the issues in livelihoods and economies that depend and circumferences on them. The over exploitation of the oceanic bodies has left the tides of vulnerability with a higher wave of oscillating the survival of oceanic lives. The question of survivability of these voiceless voices to be addressed as prime factor to ensure the confidence in future generations about their sustainability. These threat prone conditions cause the edge of extinction of marine species such as North Atlantic Right Whale, Asian Giant Soft shell Turtle, Porpoises, Bluefin tuna, Sea otters, Manatee and Fur seals. Crimes on aquatics especially on Dolphins, which was declared by Government of India as National Aquatic Animal do occur even after the launch of the Project Dolphin in 2019. The deterioration of marine biodiversity has eventually lead to a situation of endangering not only the pisces of the kingdom Animalia but also declined the richness bestowed on the seas and coasts. The article also lays stress on the aspects of economic contributions by these marine enriched resources. Human activities and consistent intervention such as putting plastic waste in oceans, oil spilling, the catastrophe by cruise ships which dump waste into waters, fill the planet with carbon dioxide, and kill marine wildlife must be termed as unspeakable violence against defenseless creatures. The state and the position of these aqua culture and marine fauna has portrayed the graph of vulnerability at a higher rate. The article further more emphasize on the concept of doctrine of

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inter-generational equity in owing to Mother Earth and to all succeeding generations to develop and conserve the natural resources thereby preserving these aquatic species. Further about the initiatives taken by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India in ensuring the optimal utilizations of the natural resources and living creatures. The article throws light on the dark areas of criminality succumbing the lives of these dumb creatures and the confronting and circumferences the Indian laws. It also bridges the position on India with that of the international territorial scenarios in mitigating the threats towards sustainability in fishing. This article tries to provide a solution by finding ways to attain the go green concept in the aqua blue world with the use of modern technologies. It further upholds the of Right of survival of these species on the mother earth.

Key Words: Sustainability, Fisheries, Aqua Species, Marine, Extinction, Criminality.

Introduction



Were you hit by an asteroid?

Laminated with fumes of peril

Who has done this to you

I pity for you

Oh Mother Earth!

After years of evolution, Earth is the only planet to be inhabited by humans and other living species. At this point of time Earth along with its living species can be termed as Virgin Mother Earth as it is made and given life to living organisms and the place in itself is synonymous to purity. As it is universally going,

'beauty is in the eye of beholder', the beauty of Mother Earth has never been a varying one and it proportionally ratified each and every beholder's perspective, be its subjective or objective.

The Mother Nature and Earth has never failed to extend an abode to all and no wonder till date it has witnessed a varied number of species from microscopic to macroscopic. All in all, there are thought to be up to two million species living in the oceans, with some estimates putting the figure higher. So far, we know about fewer than 250,000, according to the World Register of Marine Species.³ The most beautiful gift over which the evolution of every species spins is nothing but the axis of light. The earth based life has a ray of hope for survival, whether being in the sea or shore is always determined by their source. But there is always a swing - whether light is a shield or a sword?

Ahmed (2022)⁴ notes that the invention of the light world illuminated the whole world and today, even shores and coastal areas are well-lit due to the establishment of ports for trade and recreation. However, scientists have revealed the negative impacts of artificial light at night on marine species and their life patterns. They state that light also affects fish and other creatures that thrive in shallow waters near the shores. Excessive light interferes with their circadian rhythms, according to which species decide their times of migration, breeding etc. Also, light exposes small fish and makes them more susceptible to an attack by predators.

Nearly 71% of the earth's surface is covered by oceans, which together comprise a total of approximately 1.37×10^{29} litres, weighing about 1.40×10^{36} metric or long tons⁵. The ocean has long taken the brunt of the impacts of human-made global warming, says UN Climate Change. As the planet's greatest carbon sink, the ocean absorbs excess heat and energy released from rising greenhouse gas emissions trapped in the Earth's system⁶.

Despite all the natural or manmade troubles, it is always a surprising question which comes but goes unanswered ie, the question of survivability or sustainability. Both seems to be the sides of the 'coin of life'. Every life on this earth has right to get survived and equally the right to prove them sustainable Many species which has endorsed them to be fit for survival has proved them failed in the test of sustainability.

Equally the species which has passed in the test of sustainability is now facing the threat of unviability. Sustainable development is the development that seeks to improve the quality of human life without undermining the quality of our natural environment.⁷ It implies protecting the environment wealth, human capital stock, land, water and air, ecological living and non-living resources, and socio economic resource base.

³ Henriques, M. (2023, February 10). *The unknown giants of the deep ocean*. BBC Future. <https://www.bbc.com/future/article/20230209-how-deep-sea-creatures-are-discovered>

⁴ Ahmed, Z. (2022, December 1). 10 types of ocean pollution. Marine insight. <https://www.marineinsight.com/environment/types-of-ocean-pollution/>

⁵ Dr. Aradhana Salpekar. (2008). *Marine Pollution*. Jnanada Prakashan (P & D).

⁶ United Nations. *How is climate change impacting the world's ocean*. <https://www.un.org/en/climatechange/science/climate-issues/ocean-impacts>

⁷ Myneni, S.R. (2020). *International Environment Law*. New Era Law Publication

Brundtland report defines sustainable development as the “development that meets the needs of the present without compromising the ability of the future generation to meet their own needs” (Myneni, 2020). The concept of sustainable development is meant for all species irrespective of their survival. Aquatic species are no exception to the doctrine and it is always a moral, ethical and social responsibility and a sense of equity to ensure the aquatic species, a threat free survival. Sea is regarded and worshipped as 'bowl of endless fortune'. What sea can give to every living species is countless. At the same time what kind of strangulations sea is undergoing is speechless, one main reason is being marine pollution.

Ecological studies on Marine Pollution fall into these principal categories namely Biochemistry of Pollutants, Marine ecotoxicology, Biological principles of anti-pollution measures.⁸ The biochemistry of toxicants includes the investigation of the sources of pollutants, the pathways along which they enter the marine environment, patterns of accumulation in the biotic and abiotic components of ecosystems, mechanisms and rates of migration of pollutants, their transformations and other processes which determine the fate of toxicants in the sea.

'Marine Ecotoxicology' involves the study of biological effects and consequences of human interference with the composition of the marine environment (Salpekar, 2008). Though sea is the bowl of endless fortune, even a small leak in the bowl will make the entire system to be collapsed. Fishing though strives for maintaining ecological balance at the same time to be ensured that it is sustainable as well. Sustainable fishing is a prime need of the day to ensure the places and other marine kingdom to survive by striking a balance.

EDC is also based on the precautionary principle that ensures operators to take appropriate action to prevent environmental damage from occurring⁹. Under the “polluter pays” principle the responsible party will be required to restore environmental damage and also responsible for compensating consequent damages caused on receptors (Central Pollution Control Board, 2022).

The oceans are now being influenced by the human-kind the destruction of habitats, pollution, overfishing, and the potential effects of global warming. Limited progress has been made, but the future of the oceans, doesn't seem to be very bright after all.¹⁰ Compared to even the most advanced among the other animals, human beings exhibit a number of traits that distinguish them as radically different: rational thought, together with the ability to analyze, conceive, and understand abstract notions; the capacity to experience and express aesthetic emotions; the feeling of moral responsibility, the power to love.¹¹

⁸ Salpekar, A. (2008). *Marine Pollution*, Jnanada Prakashan (P & D).

⁹ Central Pollution Control Board. (2022). *General Framework For Imposing Environmental Damagae Compensation*. Ministry of Environment, Forest and Climate Change. [https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20\(EDC\)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence](https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20(EDC)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence)

¹⁰ Castro, P. & Huber, M .E. (2010). *Marine. Biology*. (8th ed.) McGraw-Hill

¹¹ Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press.

The court rightly recognized that it's a moral duty and legal obligation under the doctrine of *parens patriae* (the power of the state to act as guardian for those who are unable to care for themselves, such as children or disabled individuals) to protect the rights of animals and that the courts are uniquely positioned to change animal's legal status based on changing morality and existing legal principles.¹² There are so many industries attached with marine kingdom.

Each should ensure in their own way that sustainable fishing is not only going to ensure the survival of the aquatic species but at the same time there is always the notion of inter-generational equity which kicks in the humane in every human from getting it kicked out.

The constructive destruction of the 'Holy Planet'

The formation of Earth is itself an interesting wonder. When the universe began, around 14 billion years ago, Earth wasn't around.¹³ Even today, scientists don't know exactly when the earth was formed. They believe that it was formed around 4.5 billion years ago. Billion years ago, there was no sun, earth, or moon in our solar system. Instead, there was only a cloud of frigid dust particles moving through empty space.¹⁴ This cloud of gas and dust was disturbed, the most likely explanation for this disturbance is the explosion of a distant star upon its death, which is known as a supernova.¹⁵ The supernova collapsed with the pull of gravity and then it turned into a solar nebula. When the cloud spun quickly, the huge dust and gas gathered to the core thereby increasing the nebula's speed. As the spinning increased, the hydrogen atoms began to form at the center of the nebula, started fusing together and formed helium. The nuclear fusion at the center of the cloud became the Sun, the first entity of the solar system, which is the source of light and life. The formation of the Sun used up more than half of the matter in the nebula.

The world is full of complexities. Nature being one such complex phenomenon, which once rule human species despite their demography. It is no surprise that even in this present technological era, there are people who believe nature as God and worship. Nature in its all forms were worshipped. The mind of appreciating and respecting nature in its fullest were stitched in the minds of human being. Even the literatures has not disappointed the readers in making salutations to the Mother Nature. Hinduism connotes "Ether, air, fire, water, earth, planets, all creatures, directions, trees and plants, rivers and seas—they all are organs of God's body. Remembering this, a devotee respects all species". *Srimad Bhagavata Mahapurana* (2.2.41).¹⁶ In Christianity, "God Himself says that His creation is very good. The material world matters

¹² Shad, S. (2019, July 10) *Indian High Court Recognizes Nonhuman Animals As Legal Entities*. <https://www.nonhumanrights.org/blog/punjab-haryana-animal-rights/>

¹³ Meyers, A. (2021, August 19). *Formation of the Earth: Theories*. Study.com. <https://study.com/academy/lesson/formation-of-the-earth-theories.html>

¹⁴ Saumya. (2022, November 22). *Do you know when and how the earth was formed?*. Jagran Josh. <https://www.jagranjosh.com/general-knowledge/do-you-know-when-and-how-the-earth-was-formed-1669119167-1>

¹⁵ Meyers, A. (2021, August 19). *Formation of the Earth: Theories*. Study.com. <https://study.com/academy/lesson/formation-of-the-earth-theories.html>

Saumya. (2022, November 22). *Do you know when and how the earth was formed?*. Jagran Josh. <https://www.jagranjosh.com/general-knowledge/do-you-know-when-and-how-the-earth-was-formed-1669119167-1>

¹⁶ McDermott, M. (2011, April 1). *Educational Insight: Our Sacred Earth*. Hinduism Today. <https://www.hinduismtoday.com/magazine/april-may-june-2011/2011-04-educational-insight-our-sacred-earth/#:~:text=Hindu%20thought%20envisions%20the%20Earth,to%20be%20Gods%20and%20Goddesses>

to God; He sustains it all the time. Without Him it would fall apart into chaos. He is before all things, and in Him all things hold together" (Colossians 1.16–17).¹⁷ Gaia was the Greek goddess of Earth, mother of all life, similar to the Roman Terra Mater (Mother Earth) reclining with a cornucopia, or the Andean Pachamama, the Hindu, Prithvi, "the Vast One," or the Hopi Kokyangwuti, Spider Grandmother, who with Sun god Tawa created Earth and its creatures.¹⁸ Thus every religion teaches to worship earth since it is considered as pure as God.

It is always the universal belief and rule that when there is dark, there is light and when there is good, there is evil. As the Croatian proverb says 'If you ask for too much at once, you will come home with an empty bag'. Man's greed is never ending. The zest for his happy living has pushed him to the zenith of self-centric mind and mercilessness. Pollution is the introduction or release of substances or energy that decrease the quality of the marine environment. Many pollutants are toxic or harmful to marine life.¹⁹ Marine pollution as a maritime crime encompasses those activities that cause harm to the marine environment through the dumping or releasing of toxic material into the ocean.²⁰ The connotation of the oceanographers is that unless man introduces the pollutant, there is no pollution. Apparently the inference is that if pollution is man-caused it can be man-cured.²¹

The most astonishing creation of the nature is human brain. It has never let down its own self when it travelled in the path of exploration. The advancement of science and technology has contributed much for the urge of human species that their zeal for explorations goes unquenched. For the first time in the long history of life on Earth, a species has emerged that is capable of uncovering and understanding the secrets of the universe and of using its acquired knowledge to consciously and deliberately manipulate the world, including other living beings and its own nature, for clearly defined purposes; a species endowed with unique intellectual, artistic, and social abilities; a species, in particular, invested with the redoubtable burden of moral responsibility.²²

The war of existence and the war to prove fittest has pushed mankind to the stage of putting other species in the cocoon of danger. No global countries is an exception to this war against nature. India has a coastline of about 7,500 kilometres, of which the mainland accounts for 5,400 kms, Lakshadweep coast extends to 132 kms and Andaman and Nicobar Islands have a coastline of about 1,900 kms.²³ India is also one of the world nation, and looking it as child it appears as inadequately nutritive child which adamantly fails to

¹⁷ White, B. (2006, November 1). *Why should Christians care for the planet?*. Evangelical alliance. <https://www.eauk.org/church/resources/theological-articles/why-should-christians-care-for-the-planet.cfm>

¹⁸ Weyler, R. (2019, October 25). *Gaia: everything on Earth is connected*. Greenpeace. <https://www.greenpeace.org/international/story/24978/gaia-ecology-earth-is-connected-rex-weyler/#:~:text=Gaia%20was%20the%20Greek%20goddess,created%20Earth%20and%20its%20creatures>

¹⁹ Castro, P. & Huber, M. E. (2010). *Marine Biology*. (8th ed.). McGraw-Hill

²⁰ Lycan, T & Buskirk, L.V. (2021). *What we know about Maritime Environmental Crime*. https://www.safeseas.net/wp-content/uploads/2021/09/What_We_Know_About_Maritime_Environmental_Crime.pdf

²¹ Salpekar, A. (2008). *Marine Pollution*, Jnanada Prakashan (P & D).

²² Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press

²³ Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis.

foresee the destructive deficiencies. It is a responsibility and duty of every human species to restore the sanctity and purity, which the Mother Earth has given us to the fullest for all these years.

Is Natural selection the Nature's selection? The Digging

Water remained a gas until the Earth cooled below 212 degrees Fahrenheit. At this time, about 3.8 billion years ago, the water condensed into rain which filled the basins that we now know as our world ocean.²⁴ Little drops of water make the mighty ocean. But its synonymous to the phrase, 'Rome wasn't built in a day'. It took millions and millions of year for these oceans to be the abode for many species. Marine Life connotes the life below water. The deep blue sea is an abode of many aquatic species like fish, crab, seal, octopus, shark, sea horse, walrus, starfish, whale, penguin, jelly fish, sea gull, dolphin, otter, sea urchin, sea lion, sea anemone, coral etc. As the saying goes Admiration begins when acquaintance ceases, the admiration towards these species ceased even though the acquaintance begun. Like how a flora, fauna and humans exists in land, there are variety of different sea creatures which exist in sea's and deep sea, all full of life, adorable and beautiful. Expeditions to the depths of the oceans have revealed strange dark worlds bristling with species new to science – now the race is on to discover them.²⁵ Ahmed (2022)²⁶ notes that Eutrophication is a process which occurs when a body of water receives excess nutrients, mainly nitrogen and phosphorus, which lead to the growth of algae. Its consequences are harmful algal blooms that absorb all sunlight and prevent it from penetrating the water surface, creating dead zones in the ocean with deficient oxygen levels. Also, some marine mammals die while others migrate from such areas to others, affecting the delicate balance of the marine ecosystem.

Whenever we think of aquatic species the very moment we think of gastronomical dishes but we never think that those platings are nothing but decorated crematorium for the beautiful voiceless friends. The human species during pandemic were traumatized by seclusions and were craving for the situation to be set right. A breath of fresh air was more valuable than human materialistic needs. We win through every situation and prove that we are fittest. But we need to understand that the survival war is not with mercy but without.

Sociobiology has been vigorously opposed for various reasons by many philosophers and social scientists. Some see in it vestiges of social Darwinism, the doctrine defended, notably, by the nineteenth-century British philosopher Herbert Spencer, to justify, on the strength of Darwin's theory, the excesses of economic laissez-faire. In the view of others, sociobiology exaggerates the role of genetic determinism, to the detriment of environmental influences, and encourages racial and social discriminations.²⁷

²⁴ National Ocean Service. Why do we have an ocean?. Retrieved March 12, 2023, from https://oceanservice.noaa.gov/facts/why_oceans.html#:~:text=The%20ocean%20formed%20billions%20of%20years%20ago.&text=Water%20remained%20a%20gas%20until,known%20as%20our%20world%20ocean

²⁵ Henriques, M. (2023, February 10). *The unknown giants of the deep ocean*. BBC Future. <https://www.bbc.com/future/article/20230209-how-deep-sea-creatures-are-discovered>

²⁶ Ahmed, Z. (2022, December 1). 10 types of ocean pollution. Marine insight. <https://www.marineinsight.com/environment/types-of-ocean-pollution/>

²⁷ Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press.

The organisms have an ecological minimum and a maximum within a range in between which represents the limits of tolerance.²⁸ According to Shelford, all environmental factors have a tolerance limit namely the critical minimum and the critical maximum. The range between the critical minimum and the critical maximum is known as limits of tolerance. Any value lying between these limits will naturally fall in the limits of tolerance for an organism. If the limits of tolerance exceeds for a particular species, it will lead to disappearance of the species from that area as such condition exist. But before this range is crossed on either side and the limits of tolerance are reached, there is a zone called physiological stress. The range of tolerance and the optimum conditions vary for geographical races of the same species.(Ragothaman, 2010)

It is not a recent study that the oceans are strangulated by the interferences of humans and getting choked. Right from the evolutions of humankind humans never failed themselves imposing threats to marine lives, be its pollution, fishing, acidification et cetera.

Environmental damage means the adverse effects induced on environmental properties (or goods) due to anthropic activity, in this context, environmental goods may be natural resources such as air, soil, surface water, groundwater, flora and fauna, ecosystem, biodiversity and the services they provide to ecosystem or to humans.²⁹ The destruction of habitats, pollution, and the extinction of species will certainly escalate if no drastic measures are taken. Perhaps even more alarming is the possibility of a rise in sea levels of global warming. The melting of Arctic ice cap as a result of global warming will potentially intensify international conflicts as nations scramble to claim a seabed rich in oil and gas reserves.³⁰

As said by Aristotle, 'Man is by nature a social animal'. Humans need interactions with others be it with other human or with nature. The association of individual whether as a family or society, if this integration is shaken or prone to shatter, Man as the strongest surviving species will never let that happen. The same survival vigour is not at par given to all species. Some are with vulnerability and susceptibility to attacks and fall an easy prey, in particular aquatic species. The toxic organics have been the most disturbing of modern day chemicals commonly discharged either purposefully or accidentally into the marine environment. These include the biocides such as fungicides, herbicides, insecticides, rodenticides, halogenated hydrocarbons, petroleums and industrial chemicals.

Pesticides such as DDT and Ketone which are more soluble in water tend to collect within the fatty tissues of marine organisms.³¹ Radioactive material are discharged to marine environment by nuclear power plants, nuclear power plant fuel production and reprocessing plants. Other sources of radio activity include weapons testing, mine drainage, accidental spillage and a few isolated industries. Salpekar (2008).

²⁸ Ragothaman, G & Trivedy, R.K. (2010). Aquatic Ecology, Agrobios (India)

²⁹ Central Pollution Control Board. (2022). General Framework For Imposing Environmental Damagae Compensation. Ministry of Environment, Forest and Climate Change. [https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20\(EDC\)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence](https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20(EDC)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence)

³⁰ Castro, P. & Huber, M .E. (2010). *Marine. Biology.* (8th ed.) McGraw-Hill

³¹ Salpekar, A. (2008). *Marine Pollution*, Jnanada Prakashan (P & D).

The Wholesome Right to Life from Mankind to Pisces

These concepts had attained importance in recent years especially after witnessing the after effects of Industrial Revolution. Peace lovers, Protectors of Nature and Forward thinkers through Organizations keep on insisting about the dire need for sustainable development. This paved way for the development of Sustainable development goals. The Sustainable Development Goals (SDG's) were born at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012. The objective was to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing our world.³²

The 14th Goal enshrines Life below water which means to Conserve and sustainably use the oceans, seas and marine resources for sustainable development.³³ Marine creatures suffer from failing to identify plastic particles from food so they end up eating plastic waste.³⁴ As it is indigestible, it takes up space in the stomach of marine species eventually killing them (Andreajin, 2022). The right to life is the cardinal rule of survival which is bestowed on all living species. The beauty of fishes or any other aquatic species is always looked as an embodiment of ornamental pleasure. A power shut will literally make an aquarium fish to struggle for life, though its threat to survival is zero. Humans voyeuristic minds is of on higher rate that they portray them as predators. The right to hindrance free life style is the legally, morally, ethically and socially a need for every living beings. Any measure to ensure the black letters to get life to if only documented and not been made practical will eventually give no solutions to existing marine issues.

Oil on ocean surfaces is harmful to many forms of aquatic life because it prevents sufficient amounts of sunlight from penetrating the surface, and it also reduces the level of dissolved oxygen.³⁵ Crude oil ruins the insulating and waterproofing properties of feathers and fur, and thus oil-coated birds and marine mammals may die from hypothermia. (Oil Spill, n.d). Moreover, ingested oil can be toxic to affected animals, and damage to their habitat and reproductive rate may slow the long-term recovery of animal populations from the short-term damage caused by the spill itself. (Oil Spill, n.d). Damage to plant life can be considerable as well; saltwater marshes and mangroves are two notable shore ecosystems that frequently suffer from oil spills. (Oil Spill, n.d).

It is a universal reality and proof of survival that one species survival is dwelled on the evacuation of other species. And the rule applies for marine beings as well. Big fish always feeds on the smaller fishes for their survival and it always makes the survivability tough for the weaker fishes. Human species differ

³² United Nations Development Programme. *Background on the goals*. SDG Accelerator. Retrieved March 15, 2023, from [https://www.undp.org/sdg-accelerator/background-goals#:~:text=The%20Sustainable%20Development%20Goals%20\(SDGs,economic%20challenges%20facing%20our%20world](https://www.undp.org/sdg-accelerator/background-goals#:~:text=The%20Sustainable%20Development%20Goals%20(SDGs,economic%20challenges%20facing%20our%20world)

³³ United Nations. *Conserve and sustainably use the oceans, seas, and marine resources for sustainable development*. Department of Economic and Social Affairs. Retrieved March 15, 2023 from <https://sdgs.un.org/goals/goal14>

³⁴ Andreajin. (2022, June 03). *Great Pacific Garbage Patch Facts*. Facts.Net. <https://facts.net/great-pacific-garbage-patch-facts/>

³⁵ The Editors of Encyclopedia Britannica.(Ed.) (2023). *Oil Spill*. Retrieved March 19, 2023, from <https://www.britannica.com/science/oil-spill>

from this notion as they don't turn to be a cannibal but the anthropophagy is not for flesh of other human but for the greed for materialistic pleasures.

Sources of Man Made noise in the ocean includes Vessels (ships and boats), Ice breakers, Hovercraft and Vehicles on ice, Aircraft (fixed wing and Helicopters) Dredging, Tunnel boring, Other construction operations, Drilling from islands and caissons, Drilling from bottom-founded platforms, Drilling from Vessels, Off shore oil and gas production, Air guns, Sleeve exploders and gas guns, Vibroseis, Commercial Sonars (including fish finders, depth sounders), Military sonars, Explosions, Siesmology, Acousitc propagation, Acoustic tomography and Acoustic thermometry.³⁶

The development of underwater sound as a method for detecting submarines began during World War I and accelerated rapidly during World War II. During the Cold War, acoustic antisubmarine warfare became the principal deterrent against missile-carrying submarines roaming the high seas. Since the end of the Cold War ocean acoustics has continued to retain its military significance, but now militaries seek to expose submarine and submerged mine threats in shallow-water areas.(Ocean Studies Board, 2003). It is a saddened fatal reality that the aquatic mammals which are regarded as highly intellectual species use the technology called as echolocation. Many marine species like whales and dolphins use this technology for invading purposes. These sonar are transmitted by the voiceless creatures as their voice of identity.

New techniques in the transplantation of coral and sea grasses, promise the reseeding of damaged reefs and sea grasses. Sea birds are even attracted to old nesting grounds by using painted decoys and solar-powered tape recorders that play bird calls.³⁷ Studies have shown one cruise ship produces roughly the same amount of carbon emissions as 12,000 cars.³⁸ They're also poorly regulated.

Mark Jacobson, a professor of civil and environmental engineering at Stanford University, tells Popular Science that the type of fuel cruise ships burn contributes to their many harmful environmental effects. (Benson, 2022). "They generally use bunker fuel, which is the dirtiest type of fuel. Bunker fuel puts out lots of black carbon, sulfates and other chemicals," Jacobson says. (Benson, 2022) "Black carbon is the second leading cause of global warming after carbon dioxide." The particulates from burning bunker fuel often get cleared out of the air through precipitation, thus eventually polluting the ocean, Jacobson says. (Benson, 2022).

Dolphins, one of the highly intellectual species were called as the friend of swimmers, were generally trained to and during unprecedented situations and even during the world war the part played by these dolphins are commendable. But these beautiful creatures has now took the branding of endangered species. Though the marine mammals were perform and adapt to human commands, they are not treated with humanity as a person but only as marine species. The court has granted personhood to all animals, but it

³⁶ Ocean Studies Board. (2003). *Ocean Noise and Marine Mammals*. The National Academic Press. <https://www.pdfdrive.com/ocean-noise-and-marine-mammals-d170723407.html>

³⁷ Castro, P. & Huber, M .E. (2010). *Marine. Biology*. (8th ed.) McGraw-Hill

³⁸ Benson, T. (2022, June 27). Care about the planet? Skip the cruise, for now. Popular Science. <https://www.popsoci.com/environment/why-cruise-ships-are-bad-for-the-environment/>

hasn't clearly illustrated the rights that will accompany personhood. This can be developed through future litigation.³⁹

Joseph L. Sax, Professor of Law, University of Michigan-proponent of the Modern Public Trust Doctrine has given the historical background of the Public Trust Doctrine as under: The public trust doctrine primarily rests on the principle that certain resources like air, sea, waters and the forests have such a great importance to the people as a whole that it would be wholly unjustified to make them a subject of private ownership.⁴⁰ The said resources being a gift of nature, they should be made freely available to everyone irrespective of the status in life. The doctrine enjoins upon the Government to protect the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes. (Divan, 2001). There is a popular saying that 'A stitch in time save nine'. Many a times though all mechanisms has failed, Law never fails to restore justice and set right evils. By its strenuous efforts even the judiciary has many a times stood as the voice for the voiceless beings.

The odourless and tasteless H₂O is often turns itself to be a need and a question. Even the worlds history has traces for water wars. There is not only a threat to aquatic species but also threat to water bodies itself, which is relatively inter-connected problem. Water conflict is also the main reason for its position in Indian Constitution. Water is a subject in the State List under the Indian Constitution. Consequently, the Water Act, a central law, was enacted under Article 252(1) of the Constitution, which empowers the Union Government to legislate in a field reserved for the states, where two or more State Legislatures consent to a central law.

All the states have approved implementation of the Water Act as enacted in 1974. (Divan, 2001). The main reason behind passing of the Act is to ensure the 'whole some water' and not 'some water'. All these in turn going to facilitate the hindrance free enjoyment of water bodies by homosapiens and pisces as well. A tactic of polluters to avoid restraining orders under Section 33 is a motion to quash the order on the grounds that the Water Act violates the fundamental right to carry on a trade or business guaranteed by Article 19(1)(g) of the Constitution of India. (Divan, 2001). In *Aggrawal Textile Industries V State Of Rajasthan*⁴¹, Sections 25 and 26 of the Act make provisions for the grant of consent by the State Board for discharging any sewage or trade effluent into a stream or well. Section 28 provides for an appeal against an order made by the State Board under Sections 25 and 26, and a further right of revision is conferred under Section 29 of the Act. This shows that the Act contains adequate provisions for grant of consent by the State Board as well as provisions for appeal and revision against the orders passed by the State Board so as to enable a person to carry on his trade or business after obtaining the consent of the State Board. It is, therefore, not possible to hold that Section 24(1) imposes unreasonable restrictions on the right of the petitioners to carry on their trade or business.⁴² Despite piling up threat to survivability and succumbed

³⁹ Shad, S. (2019, July 10) Indian High Court Recognizes Nonhuman Animals As Legal Entities. <https://www.nonhumanrights.org/blog/punjab-haryana-animal-rights/>

⁴⁰ Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. (2nd ed.). Oxford University Press

⁴¹ *Aggrawal Textile Industries V State Of Rajasthan* Rajasthan High Court, S.B.C. (Writ Petition No. 1375/80)

⁴² Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. (2nd ed.). Oxford University Press.

doubt of sustainability and equally the mechanisms available for mitigation and evacuation, the graph of vulnerability is accelerated but not deteriorated. The tyre, tier and tired systems of checking crime and restrictions has proved in many occasions an imaginative feasibility is a certain odd truth.

The Challenges dropping Oceanic Pulsations

Maritime Environment Crime refers to criminality which takes place in the sea and that has a harmful impact on the marine environment.⁴³ It is defined as “activities that cause significant harm to the marine environment, where humans are often only second order victims. Such crimes take place, in the sea, in the sense of the exploitation or degradation of the resources, fauna, cultural heritage, and infrastructures located in the oceans themselves. They are, as such, crimes of the anthropocene, in the sense that they take place in the context of human activities that engage and interact with the environment of the oceans themselves”.⁴⁴ Crime is not a new phenomenon. Right from the moment of plucking apple from the tree of knowledge the well-known combo, Adam and Eve is said to have committed the crime. Since then it has been an unusually usual happening in the society. The amalgamation of Actus reus and Mens rea needn't always go together for all crimes.

By going with the words of Raffaele Garofalo, Crime symbolizes violation of pity and probity. There are varied number of maritime offences committed globally such as drug trafficking, illegal fishing, piracy, smuggling etc. Earth's biosphere, climate biodiversity crises and environmental issues are raising a profound level of awareness concerning the collective responsibility toward Earth's life and demanding the responsibility for promoting a healthy ecosystem.⁴⁵

a. Marine Dumping

Marine Dumping has been defined as the deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures, as well as the deliberate disposal of these vessels or platforms themselves.⁴⁶ Marine Dumping can destroy or degrade important habitats for aquatic species and cause coastal erosion and salutation, which affect the health and productivity of the marine environment.⁴⁷ The most toxic waste material dumped into the ocean includes dredged material, industrial waste, sewage sludge, and radioactive waste.⁴⁸

⁴³ Lycan, T & Buskirk, L.V. (2021). *What we know about Maritime Environmental Crime*. https://www.safeseas.net/wp-content/uploads/2021/09/What_We_Know_About_Maritime_Environmental_Crime.pdf

⁴⁴ Bueger, C & Edmunds, T. *Blue Crime: Conceptualising Transnational Organised Crime at Sea*. Marine Policy 119 (2020), DOI 104067. <https://www.sciencedirect.com/science/article/pii/S0308597X20300270>

⁴⁵ Mahamane, A. (Ed.). (2016). *Diversity of Ecosystems*. (1st ed., pp 183). InTech.

⁴⁶ Safewater.Org. *Marine Dumping*. Retrieved March 18, 2023, from <https://www.safewater.org/fact-sheets-1/2017/1/23/marine-dumping>

⁴⁷ Safewater.Org. *Marine Dumping*. Retrieved March 18, 2023, from <https://www.safewater.org/fact-sheets-1/2017/1/23/marine-dumping>

⁴⁸ Safewater.Org. *Marine Dumping*. Retrieved March 18, 2023, from <https://www.safewater.org/fact-sheets-1/2017/1/23/marine-dumping>

b. Garbage Patches

Garbage patches are large areas of the ocean where litter, fishing gear, and other debris - known as marine debris - collects.⁴⁹ They are formed by rotating ocean currents called “gyres”. The gyres pull debris into one location, often the gyre’s center, forming “patches”. There are five gyres in the ocean. One in the Indian Ocean, two in the Atlantic Ocean, and two in the Pacific Ocean. Garbage patches of varying sizes are located in each gyre.⁵⁰ Great Pacific Garbage Patch, a zone in the Pacific Ocean between Hawaii and California that has a high concentration of plastic waste. The extent of the patch has been compared to the U.S. state of Texas or Alaska or even to the country of Afghanistan. Some 80 percent of the plastics in the garbage patch come from the land. It is composed of 3.6 trillion pieces of plastic and continues to expand. (NOAA, 2023).

c. Catastrophe by Cruise ships

(“Cruise ship Environmental Impact”, n.d.)⁵¹ Cruise ships are a catastrophe for the environment. They dump toxic waste into our waters, fill the planet with carbon dioxide, and kill marine wildlife. They once were small ships, around 30,000 tons. Now, corporations are building billion-dollar cruise ships to hold more than 9,000 people. They’re doing everything they can to pack these floating cities full of tourists while polluting everything in their path.

Eg. Carnival Corporation is the biggest cruise company in the world with 10 cruise lines and is the most notorious cruise company for their environmental impacts. They have been charged with Dumping food mixed with plastic waste in Bahamian waters, Falsifying records of environmental compliance plans, Illegally releasing over 500,000 gallons of sewage and 11,000 gallons of food waste globally, Illegally discharging oily waste off the coast of England. Illegally dumping thousands of gallons of wastewater into Glacier Bay National Park in Alaska. (“Cruise ship Environmental Impact”, n.d.)

Though a beautiful vessel with many lives locomoting the happiness by vacationing on sea, the cruise ship, it is like a beautiful sparkling cloud float on the sea. Despite the beauty it also has its evil side of catastrophic exploitation of shattering marine life.

d. Oceanic Oil Spills

Oceanic oil spills became a major environmental problem in the 1960s, chiefly as a result of intensified petroleum exploration and production on continental shelves and the use of supertankers capable of transporting more than 500,000 metric tons of oil. (The Editors of Encyclopedia, 2023).

⁴⁹ Nation Oceanic and Atmospheric Administration. Garbage Patches. U.S Department of Commerce. Retrieved March 18, 2023, from <https://marinedebris.noaa.gov/info/patch.html>

⁵⁰ Nation Oceanic and Atmospheric Administration. Garbage Patches. U.S Department of Commerce. Retrieved March 18, 2023, from <https://marinedebris.noaa.gov/info/patch.html>

⁵¹ Friends of the Earth. *Cruise Ships' Environmental Impact*. Retrieved March 14, 2023, from <https://foe.org/blog/cruise-ships-environmental-impact/#:~:text=Cruise%20ships%20are%20a%20catastrophe,small%20ships%2C%20around%2030%2C000%20tons>

The total quantity of oil released annually into the world's oceans exceeding one million metric tons. The unintentional or negligent release of used gasoline solvents and crankcase lubricants by industries and individuals greatly aggravates the overall environmental problem.⁵²

Oil are considered to be the prime source over which many industries thrives for their stabilized economy. It is one of the ancient fuel. The industrial effluents allowed to mix with sea water or the tanker carrying oil if spills on the ocean, not only pollutes the water but also endangers the aquatic species. Right from larvae fishes to full grown fishes are affected by these oil spills.

e. Illegal Mining and Dredging

The seabed includes a number of potential resources that may be attractive to illegal actors.⁵³ This includes sand, which has been accessed through seabed dredging for millennia, but increasingly also includes minerals and natural resources accessed via the developing technology of seabed mining. (Lycan, 2021)

Seabed mining is a relatively new phenomenon and is currently limited mostly to shallow waters, but there is developing interest in deep-sea mining. (Lycan, 2021) There are a varied number of aquatic species which has longevity and sustainability. Deep sea mining will cause tremors in their life style and will certainly result in disturbances to the dark deep oceanic lives.

f. Noise pollution by Ships and Maritime Equipment

Marine mammal inner ears physically resemble land mammal inner ears, although the external ears are typically absent and the middle ear extensively modified. Since many forms of hearing loss are based in physical structure of the inner ear, it is likely hearing damage occurs by similar mechanisms in both land and marine mammal ears.⁵⁴ Intangible aspect of Marine pollution is Noise pollution.⁵⁵ Ahmed (2022) states that many marine mammals, like whales and dolphins, do not have sharp eye sight, instead they understand their surroundings and communicate with their species over large distances using sounds. This is known as echolocation.

However, artificial sounds from ships, sonars, and other equipment disrupt their communication and disturbs their lifecycles and affect migration, reproduction patterns, and hunting processes. It should be noted with concern that pollution free living not only amounts to external features but also relates to internal disturbances as well. Too much of noises in deep sea has certainly had a bad influence on the marine

⁵² The Editors of Encyclopedia Britannica.(Ed.) (2023). *Oil Spill*. Retrieved March 19, 2023, from <https://www.britannica.com/science/oil-spill>

⁵³ Lycan, T & Buskirk, L.V. (2021). *What we know about Maritime Environmental Crime*. https://www.safeseas.net/wp-content/uploads/2021/09/What_We_Know_About_Maritime_Environmental_Crime.pdf

⁵⁴ Ocean Studies Board. (2003). *Ocean Noise and Marine Mammals*. The National Academic Press. <https://www.pdfdrive.com/ocean-noise-and-marine-mammals-d170723407.html>

⁵⁵ Ahmed, Z. (2022, December 1). 10 types of ocean pollution. Marine insight. <https://www.marineinsight.com/environment/types-of-ocean-pollution/>

lifestyle that they started drastically impacted them to have an internal displacement from their original habitat. This has posed challenge of falling prey for predators, their mating etc.

g. Illegal Fishing and Marine Piracy

The Illegal, Unreported and Unregulated (IUU) Fishing is a worldwide problem, affecting both domestic waters and the high seas. It has adverse effects on marine ecosystem, notably on the populations of sea birds, marine mammals, sea turtles and bio-diversity as a whole. It also jeopardizes the economic survival of those who fish in accordance with law and in compliance with relevant conservation and management measures.⁵⁶ Piracy has become a lucrative trade. Ronals Noble attests that “Maritime piracy is really nothing more than transnational organized crime operating on the high seas and benefitting from their profits on land”.⁵⁷

h. Eutrophication

Eutrophication can damage important habitats such as sea grass beds and coral reefs by causing a chronic increase in phytoplankton abundance, reducing the penetration of sunlight to the bottom, and accelerating the growth of seaweeds to overgrow the bottom.⁵⁸

i. Ocean Acidification

Calcium carbonate minerals are the building blocks for the skeletons and shells of many marine organisms.⁵⁹ In areas where most life now congregates in the ocean, the seawater is supersaturated with respect to calcium carbonate minerals.(NOAA, n.d). This means there are abundant building blocks for calcifying organisms to build their skeletons and shells. However, continued ocean acidification is causing many parts of the ocean to become under saturated with these minerals, which is likely to affect the ability of some organisms to produce and maintain their shells.(NOAA, n.d.).

These are all the unnoticed strangulating challenges faced by the voiceless marine species craving for legal hearing.

The cries of Oceanic species as roaring tides

The worst scenario is even the known species are in the brink of extinction. The admiration towards them is threatened and converts into sympathy. The bad news, however, is that biodiversity is declining.⁶⁰

⁵⁶ Gray, K., Legg, F., & Andrews, E. (Eds.). (2004). *Fish Piracy – Combatting Illegal, Unreported and Unregulated Fishing*. Organisation for Economic Co-operation and Development. <https://www.pdfdrive.com/fish-piracy-combating-illegal-unreported-and-unregulated-fishing-d189451424.html>

⁵⁷ Mejia Jr, M.Q., Kojima, C., & Sawyer, M. (Eds.). (2013). *Piracy at Sea*. Springer. <https://doi.org/10.1007/978-3-642-39620-5>

⁵⁸ Castro, P. & Huber, M .E. (2010). *Marine Biology*. (8th ed.). McGraw-Hill

⁵⁹ National Oceanic and Atmospheric Administration. PMEL Carbon Program. *What is Ocean Acidification*. U.S Department of Commerce. Retrieved March 20, 2023, from <https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F>

⁶⁰ International Union for Conservation of Nature. (2022). *Background and History*. Red list. <https://www.iucnredlist.org/about/background-history#:~:text=The%20bad%20news%2C%20however%2C%20is,mammals%20and%2013%25%20of%20birds`>

Currently, there are more than 150,300 species on The IUCN (International Union for Conservation of Nature) Red List, with more than 42,100 species threatened with extinction, including 41% of amphibians, 37% of sharks and rays, 36% of reef building corals, 34% of conifers, 27% of mammals and 13% of birds.(IUCN, 2022).

As the saying goes, 'As long as a man lives, the entire world is too small for him; After death, the grave is big enough', Life is all about the rules of empathy and sympathy. Man throughout his life has a run with race and chase. In this survival running very few has invested time to stop themselves and look on the others with humanity. In this fast spinning world the word humanity started to fall off from life dictionary.

Trash in the ocean kills more than one million seabirds and 100,000 marine mammals and turtles each year through ingestion and entanglement.⁶¹ Many dolphins, turtles, and sharks mistake balloons, plastic bags, and other debris for food and will eat them without being able to digest them. They then slowly starve to death from the obstruction or suffer internal trauma from the foreign object.(Crime against Marine life, n.d.). Ghost nets are fishing nets that have been lost or left behind by in the ocean by fishermen. (Crime against Marine life, n.d.) These nets entangle dolphins, sea turtles, sharks, manatees, whales, and other sea creatures. Animals caught in ghost nets starve, suffocate, and bleed to death if not freed. If an animal's appendage is caught, it may cut off circulation to the limb and the animal can die of infection. (Crime against Marine life, n.d.)

Finning is the act of removing a shark's fins from its body for personal use or profit, after which its carcass is typically tossed back into the sea. Sharks that are captured are most often alive as their fins are mercilessly cut off from their bodies and even still when they are dumped back into the water, leaving them to be defenselessly eaten alive or bleed to death as they slowly sink to the bottom. An estimated 100 million sharks are killed annually worldwide for their fins.⁶² These cartilaginous skeletons with special electro receptors has the unique pattern of reusing electro-magnetic fields is manacled in the cage of threat because of persistent human interventions. A few cases of poaching are recorded in the middle Ganga in Bihar in the Kalni-Kushiyara River of Bangladesh, and in the upper reaches of the Brahmaputra River in Assam, India.⁶³ With very low population of the species in rivers, even a few catches will have devastating effects on long-term survival of this endemic species. (Sinha, 2010).

Sunscreens that protect our skin from the sun's harmful ultraviolet rays are deadly for corals and other marine life.⁶⁴ They contain chemicals like oxybenzone and octinoxate that lead to the bleaching of corals, damaging their DNA and affecting the colony's young corals. (Ahmed, 2022). They also affect green algae

⁶¹ Crime Museum. *Crimes against marine life*. Retrieved March 18, 2023, from <https://www.crimemuseum.org/crime-library/environmental-crimes/crimes-against-marine-life/>

⁶²Crime Museum. *Crimes against marine life*. Retrieved March 18, 2023, from <https://www.crimemuseum.org/crime-library/environmental-crimes/crimes-against-marine-life/>

⁶³ Sinha, R.K., Behra. S.,& Choudhary, B.C. (2010). *The Conservation Action Plan For The Gangetic Dolphin 2010 – 2020*. Ministry of Environments & Forests Government of India. https://nmcg.nic.in/writereaddata/fileupload/34_GangeticReport.pdf

⁶⁴ Ahmed, Z. (2022, December 1). 10 types of ocean pollution. Marine insight. <https://www.marineinsight.com/environment/types-of-ocean-pollution/>

by interfering with photosynthesis. (Ahmed, 2022) It also causes reproductive issues and impairs the nervous system of sea urchins. In dolphins, mussels and other fish, it causes fertility issues and accumulates in their tissues, affecting their growth. (Ahmed, 2022) If anything which is not meant for human consumption is forced to administer attracts stringent laws fetching severe punishments for law breakers. Unadulterated pollution free living is entitled and to be employed by every living species. If it is so man suumotu takes the decision making in his hands by sparing the lives of aquatic species as trivial. In the name of beauty human seems to show their true ugly faces.

Bleaching, an indication of stress to coral reefs, occurs when corals expel their symbiotic zooxanthellae, causing white patches to form on the colonies.⁶⁵ Even dying colonies have large numbers of zooxanthallae in their tissues, not enough to give color but enough to reestablish normal numbers, when conditions are better. (Castro, 2010). Bleached corals however do not grow and are vulnerable to disintegration. (Castro, 2010). Just like the case of cocoons turned as a bed for pupa, the coral reef is a beautiful bed for many aquatic species like Coelenteratas and Echinodermatas. The moray eel used the coral reef as a trap to hunt its prey which doing so it runs into the lengths and breadths of coral reefs which eventually cleans the algae and it is a kind of mutualism, just like the case of sucker fish (remora) on a shark's body.

The most clearly defined such unit was introduced in 1976 by the British ethologist Richard Dawkins in his bestseller, *The Selfish Gene*, under the name of meme, of which examples could be "tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches." Memes, he suggested, have a life of their own. Once launched, they are replicated, though not always faithfully, by or some other form of transmission and spread by jumping from brain to brain, in virus-like fashion.⁶⁶ It is always the last resort that anyone who is sailing in the boat of helplessness, even a log of oak will certainly gives confidence to use it as an oar to row. And in the same time, if he gets a real oar, then the zenith of his happiness is wordless. Always judiciary stands for the voiceless voices, be its social stratification or marine degradation. Restoration of justice is the prime goal and it is evidential in many of the judgments.

On May 31st, 2019, the High Court of Punjab and Haryana, in the case of Karnail Singh and others v State of Haryana⁶⁷, it was held that all animals in the animal kingdom, including avian and aquatic species, as legal entities. All citizens of the state of Haryana were declared persons in loco parentis, which will enable them to act as guardians for all nonhuman animals within the state of Haryana. The court also reiterated the NhRP's argument that legal personhood has not and should not be restricted to human beings.⁶⁸

In *UP Pollution Control Board v Mohan Meakins Ltd*⁶⁹, the Supreme Court held that those who discharge noxious polluting effluents into streams may be unconcerned about the enormity of the injury

⁶⁵ Castro, P. & Huber, M. E. (2010). *Marine Biology*. (8th ed.). McGraw-Hill

⁶⁶ Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press.

⁶⁷ Karnail Singh and others v State of Haryana, 2019 SCC ONLINE P&H 704

⁶⁸ Shad, S. (2019, July 10) Indian High Court Recognizes Nonhuman Animals As Legal Entities. <https://www.nonhumanrights.org/blog/punjab-haryana-animal-rights/>

⁶⁹ *UP Pollution Control Board v Mohan Meakins Ltd*, (2000 (2) SCALE 32)

which it inflicts on the public health at large, the irreparable impairment it causes on the aquatic organisms, the deleteriousness it imposes on the life and health of animals and the courts should not deal with the prosecution for offences under the Act in a casual or routine manner⁷⁰. In order to encourage tourism, the central government introduced various amendments in 1994 to the CRZ notification of 1991.⁷¹ The one that reduced NDZ from 100 meters to 50 conferred discretions on the central government to permit construction within NDZ. Not surprisingly, the Apex Court rejected the pleas and held the amendment invalid in the *Indian Council for Enviro Legal Action v UOI*.⁷² The keen observations of the initiatives will give us an opinion that law will never ever let anyone in the stage of devastation, dessertion, discretion and destruction. Many of the judgment strive to de-root the real meaning of the word 'life' in-consensus with all living species, be its unicellular or multicellular.

Ocean as the endless bowl feeding human greeds

Aquatic habitats emotional artistic benefaction to sea being the bowl of endless fortune has contributed much to human lives, be its medicine, minerals, food, economy, ornaments, amusements, education, sports etc. Though it has given humans without like parameters of expectations, humans never disappointed it by swindling. The concept of “fisheries crime” covers any crime connected to the fisheries sector, including crimes occurring within the fisheries sector on shore or at sea and covering illegal activities and practices that include both environmental and non-environmental crimes.⁷³ Historically, the search for knowledge has long been preceded by purely practical preoccupations.⁷⁴ Many technical advances were first accomplished empirically, without benefit of prior knowledge. Success often came before understanding. Thermodynamics, for instance, was developed to explain the conversion of heat into work long after steam engines had started pumping water, propelling boats, and pulling trains. (Duve, 2002).

Studies suggest that most shark species will become extinct in the next few decades if shark finning continues at the rate it is going today because shark harvesting rates are much higher than shark reproduction rates.⁷⁵ The market is largely based in Asian countries like China, where shark fin soup is considered a delicacy and sign of prestige and dried shark fin is heralded for its alleged healing properties. (Crimes against Marine Life, n.d.). The disappearance of sharks is likely to have devastating consequences for the marine ecosystem. (Crimes against Marine Life, n.d.)

The marine ambience gives a soothingness to the mind, but still the invasive vision has not been cleared off. They have contributed to human kind for thousands and thousands of years. Consider the example of the Blue fin tuna. This fish is one of the largest and fastest on earth. It is known for its delicious meat,

⁷⁰ Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. (2nd ed.). Oxford University Press.

⁷¹ Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis.

⁷² *Enviro Legal Action v UOI* (2011) 8 SCC 161.

⁷³ Lycan, T & Buskirk, L.V. (2021). What we know about Maritime Environmental Crime. https://www.safeseas.net/wp-content/uploads/2021/09/What_We_Know_About_Maritime_Environmental_Crime.pdf

⁷⁴ Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press.

⁷⁵ Crime Museum. Crimes against marine life. Retrieved March 18, 2023, from <https://www.crimemuseum.org/crime-library/environmental-crimes/crimes-against-marine-life/>

which is often enjoyed raw, as Sushi. Demand for this particular fish has resulted in very high prices at markets and has threatened its population.

For acoustical oceanographers, marine seismologists, and minerals explorers, sound is the most powerful remote-sensing tool available to determine the geological structure of the seabed and to discover oil and gas reserves deep below the seafloor.⁷⁶ Society as a whole has reaped substantial intellectual and practical benefits from these activities, including bottom mapping sonars and technology leading to the discovery of substantial offshore oil reserves. (Ocean Studies Board, 2023). Another fish species that has been over fished is Chilean Seabass (*Dissostichus eleginoides*), sometimes called Patagonian toothfish. In the 1990's, this fish became extremely popular in restaurants around the United States and other countries, causing an increase in demand.

Whatever the origin of our ethical behavior, there are good reasons for believing that, with the development of the brain, morality has evolved progressively from a purely pragmatic and utilitarian form to a more abstract conception of good and bad.⁷⁷ Marine has contributed much to medicinal field. Marine pharmacology is a boon for manufacturers. Oceans are not only the sources for food but also for curing of ailments, for example, the well-known product in the sea is Fish oil which is used for its rich omega 3 for UV protection. The chemicals which are in the sea bed is of tremendous use to human species by serving as anti - inflammatory, anti-viral, anti-parasitic etc. Beauty is one of the novel invention of Man kind. The industry which is rapidly growing just like other industries. Various Oceanic lives like algae, sea weeds etc are used for skin firming, brightening, moisturizing properties, even the salts and minerals are used in a larger pace by cosmetic industry. Many successful memes are neutral or, even, positively harmful. Yet, they spread. Think, for example, of drug-taking and other damaging behavioral traits. (Duve, 2022) These kinds of piracy and trafficking on the sea is at a rapid growth since sea is the viable way to facilitation.

Ecologically significant, the coastal zone in India is endowed with a very wide range of coastal eco-systems like mangroves, coral reefs, sea grasses, salt marshes, sand dunes, estuaries and lagoons which are characterized by distinct biotic and abiotic processes.⁷⁸ Developmental measures in the zone have, no doubt, created certain challenges. Mushrooming of housing colonies, selection of the coast for industrial sites and conversion of lands for non-coast uses, hit at the backbone of the self-sustaining traditional economy of coastal villages. (Leelakrishnan, 2021) The economical contribution of the ocean cannot be dealt fully without addressing marine tourism, since it is the largest economy fetching area of world tourism. There are thousands and thousands of people whose life are surviving by oceans right from tourism to education. Ocean has its own cultural and ethical values and has original sources which attracts tourists, students, researchers etc. Preserving of the eco system, oceans and marine diversity which make the ocean happy and also the human happy.

⁷⁶ Ocean Studies Board. (2003). Ocean Noise and Marine Mammals. The National Academic Press. <https://www.pdfdrive.com/ocean-noise-and-marine-mammals-d170723407.html>

⁷⁷ Duve, C. (2002). *Life Evolving : Molecules, Mind, and Meaning*. Oxford University Press

⁷⁸ Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis.

The Unrealistic Realities behind legal initiative

Our legal system based on English common law includes the public trust doctrine as part of its jurisprudence.⁷⁹ Public at large is the beneficiary of the seashore, running waters, airs, forests and ecologically fragile lands. (Divan, 2021). As it is commonly said when bad gets in to the main door, then good runs through the back door. But as far as law is concerned it makes the saying a cliché. Law always be the defender of negatives and evils, be its for anyone. There are varied number of laws for protecting water bodies be its the Constitution of India, Indian Penal Code, Environmental Protection Act, Water Act, Maritime Zones Act, Admiralty Act etc. Majority of the laws such as Wildlife Protection Act of India, Biological Diversity Act etc ensures the well-being of aquatic species without harm and hindrances.

In *M.C Mehta vs Kamal Nath*⁸⁰, it was held that the public trust doctrine, as discussed by us in this judgment is a part of the law of the land and the Motel shall pay compensation by way of cost for the restitution of the environment and ecology of the area. There are varied number of doctrine which strikes the memory when we talk about environment be its oceanic bodies or land. Doctrine such as Polluter Pay Principle, Sustainable Development, Public Trust Doctrine, Intergenerational Equity etc, were the core concept addressed by the Courts of Law.

The Indian legal system provides four major sources of law for addressing water pollution problems: (1) a comprehensive scheme of administrative regulation through the permit system of the Water (Prevention and Control of Pollution) Act of 1974; (2) provisions of the Environment (Protection) Act of 1986 relating to water quality; (3) public nuisance actions against polluters, including municipalities charged with controlling water pollution; and (4) the common law right of riparian owners to unpolluted water. (Divan, 2001).

Bringing down the purity of the water, adding up or dumping unwanted debris, polluting through effluents etc not only going to affect the marine bodies but also the richest source turning to be unviable for human consumption. Thus, it cannot be taken as a matter of trivialty but to be addressed with severity.

It is always a universal truth that as you sow so as you reap. Its more relative to Bentham's Pain and Pleasure theory. Anybody who take nature for granted and pollutes its chastity should not be spared and should be proportionately dealt with. Environmental compensation need to be imposed retroactively.⁸¹

Principle of strict liability shall be exercised on the polluter while implementing environment damage compensation.(CPCB, 2022) In cases where two or more persons are liable in respect of damage, principle of joint and several liabilities may be imposed. (CPCB, 2022). Under joint and several liability, a State

⁷⁹ Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. (2nd ed.). Oxford University Press.

⁸⁰ In *M.C Mehta vs Kamal Nath* (1997 (1) SCC 388)

⁸¹ Central Pollution Control Board. (2022). General Framework For Imposing Environmental Damagae Compensation. Ministry of Environment, Forest and Climate Change. [https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20\(EDC\)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence](https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20(EDC)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence)

may pursue obligation of EDC against any one party as if parties were jointly accountable and it becomes responsibility of the defendants to sort out their respective proportions of obligation and payment. (CPCB, 2022)

In *Narula Dyeing and Printing Works v Union of India*⁸², the court held that a consent order made under Section 25(2) of the Water (Prevention and control of Pollution) Act, 1974 by the State Pollution Control Board does not entitle the industrial unit to the trade effluents discharge and it is obligatory for the unit to comply with the conditions mentioned in the consent order and put up effluent treatment plants with the time specified in the consent order.⁸³

In *Delhi Bottling Co. Pvt. Ltd. V Central Board For The Prevention And Control Of Water Pollution*⁸⁴, the Court held that the sample was not taken in strict compliance with the procedure as under Section 21 of the Water (Prevention and Control of Pollution) Act, 1974 and this evidence cannot be regarded as admissible.⁸⁵

In *S Jagannath v UOI*⁸⁶, the court made a cost-benefit analysis between aquaculture industry and eco-restoration and illustrated the need for strict observation of CRZ notification.⁸⁷

The Prime Minister declared the Gangetic Dolphin as the National Aquatic Animal in the First Meeting of the National Ganga River Basin Authority (NGRBA) on the 5th of October 2009 and constituted a Working Group under the chairmanship of Dr. R. K. Sinha of Patna University to prepare a Conservation Action Plan for the Gangetic Dolphin on October 28, 2009 and the Ministry of Environment and Forests (MoEF) subsequently notified the Gangetic Dolphin as the National Aquatic Animal on the 10th of May 2010.⁸⁸

On 15th March 2023, The wildlife circle of Gujarat forest department, in a joint operation with the Indian coast guard, busted a racket in dolphin poaching off Porbandar coast and arrested ten fishermen with 22 dead dolphins.⁸⁹ These incidents vanishes the ray of hope and the same can be restored by judiciary deterrent measures.

‘Contemporary sustainable fisheries’ – A need for an ounce of fresh breath

⁸² *Narula Dyeing and Printing Works v Union of India* AIR 1995 Guj 185

⁸³ More, H. (2019, May 17). *Narula Dying and Printing Works v. Union of India*. The Fact Factor. <https://thefactfactor.com/tag/narula-dying-and-printing-works-v-union-of-india/>

⁸⁴ *Delhi Bottling Co. Pvt. Ltd. V Central Board For The Prevention And Control Of Water Pollution* (Air 1986 Del 152)

⁸⁵ Dhiyaaneswar, D. *Case comment : Delhi Bottling Co. Pvt Ltd v CPCB AIR 1986 Delhi 152*. Studocu. <https://www.studocu.com/in/document/christ-deemed-to-be-university/environmental-law/delhi-bottling-case-comment/44421747>

⁸⁶ *S Jagannath v UOI* (1997) 2 SCC 87

⁸⁷ Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis.

⁸⁸ Sinha, R.K., Behra, S., & Choudhary, B.C. (2010). *The Conservation Action Plan For The Gangetic Dolphin 2010 – 2020*. Ministry of Environments & Forests Government of India. https://nmcg.nic.in/writereaddata/fileupload/34_GangeticReport.pdf

⁸⁹ Khakhraiya, N. (2023, March 16). *Dolphin poaching racket busted off Porbandar coast; 10 fishermen arrested*. The Times of India. <https://timesofindia.indiatimes.com/city/rajkot/dolphin-poaching-racket-busted-off-porbandar-coast-10-fishermen-arrested/articleshow/98698697.cms>

The term 'Sustainability' refers to keeping an effort going continuously or the ability to last out and keep from falling'.⁹⁰ It denotes the characteristic of process or state that can be maintained indefinitely. (Myneni, 2020) It implies that human use of enjoyment of the world's natural and cultural resources should not, in overall terms, diminish or destroy them. (Myneni, 2020).

Makarchuk (2022) states that Sustainable means taking what you need but leaving enough of the source for future generations to meet their needs. Today's problem is over fishing or using unsustainable fishing practices. Many ocean organisms are falling victim to by-catch, where they are accidentally caught by unsustainable fishing methods like trawling. Sustainable fishing means using methods that take only the fish you are intending to catch as well as only taking what we need and leaving organisms in the ocean to maintain the populations in the wild so we can continue to put fish on our plates.⁹¹

The Patna High Court indulged Shiv Shankar Chemical Industries Pvt. Ltd vs State of Bihar⁹² an ethyl alcohol manufacturer, who failed to establish an effluent treatment plant (ETP). The High Court permitted Shiv Shankar to re-start its production on the condition that it adopted various interim measures until the ETP became operational. To safeguard the villagers, the court directed the company to bear the medical expenses of any person suffering due to the effluent.

The shipping industry is in the midst of a global push for more sustainable ways of powering the vessels, which are a challenge due to their size and the long distances they often need to travel.⁹³ Along with creating hybrid vessels, Wartsila is in the process of developing engines that run on ammonia rather than fossil fuels. (Hagerty, 2022). In Norway, the Yara Birkeland, a fully-electric container ship, went into commercial operation this year, with the added goal of becoming fully-autonomous one day, as well. (Hagerty, 2022) And there are a number of other innovations in the pipeline, including sails that could capture and convert wind into energy to power the ship's motor. (Hagerty, 2022)

Man is very fast learning creation, his acquaintance over a period of time becomes his life style. It is human psychology to adapt for changes and if the changes is not casual happening, he tries to find for alternatives. The main motto behind all these adaptations is win through situations and prove him as the toughest surviving species. His fast and furious mind will not always make the coin to toss in his favour, at times it flips also.

Castor (2010) notes that trawls that are dragged along the bottom for fish and shrimp are a major threat to sub tidal habitats. Trawling scours the sea floor and leaves scars on soft sediments, particularly muddy bottoms and causes the re-suspension of sediment, which kills suspension feeders. On hard bottoms trawling breaks off many attached animals, some of which, like sponges and tubeworms, offer shelter to

⁹⁰ Myneni, S.R. (2020). International Environment Law. New Era Law Publication

⁹¹ Makarchuk, M. (2022, January 17). *The Ocean and Humans are Connected*. Ocean wise. <https://www.ocean.org/education/the-ocean-and-humans-are-connected/>

⁹² Shiv Shankar Chemical Industries Pvt. Ltd vs State of Bihar (Civil writ Jurisdiction Case No. 17096 of 2015)

⁹³ Hagerty, C. (2022, June 23). The world's largest hybrid ship will set sail in 2024. Popular Science. <https://www.popsoci.com/technology/large-hybrid-ship-saint-malo/>

juveniles of fishes and other animals.⁹⁴ Fluctuations in the sizes of fish populations, and of year classes in particular, have long provided the impetus for fisheries investigations.⁹⁵

Scientists identify heat wave at the bottom of ocean 2013 – 2016 marine heat wave “The Blob” – warmed vast expanse of surface waters across north eastern pacific , disrupting west coast marine ecosystems, depressing salmon returns, damaging commercial fisheries.⁹⁶ New NOAA research shows – Marine heat waves also happen deep underwater. Marine heat waves dramatically impact the health of ocean ecosystems around the globe, disrupting the productivity and distribution of organisms as small as plankton and as large as whales. Warm bottom water temperatures have also been linked to the expansion of invasive lionfish along the southeast U.S., coral bleaching and subsequent declines of reef fish, changes in survival rates of young Atlantic cod, and the disappearance of near-shore lobster populations in southern New England. (Ncar, 2023)

It is always ethical and moral that even if it is an enemy, fair chance of his turn to be given. Succumbing with evils with centric forces will eventually make the opponent to surrender or punish. Like-wise, consistent warming up of temperature of marine scenarios will eventually affect the marine biology and in consequence shatter the fishing industry. It is been no surprise that beautiful and attractive things catches human eyes and the same needn't always for eyes and at times for taste as well. One such being is the Chilean Seabass popularly called as Patagonian toothfish. It is a long lived fish till 50 years, slow growing fish. Since fishers caught young seabass, healthy replenishment of its population became unlikely.⁹⁷

The sturgeons are a very old group of fishes (over 200 million years old) and make up one of the most primitive lineages of bony fishes. Their dinosaur-like bodies match their prehistoric lineage.⁹⁸ These are very large and slow growing fish. It can grow upto 4.5 mts, (15 feet) and 1135 kgs. (2500 pounds). They take 20 years to reach maturity, female releases their egg (call roe) every 3 – 4 years. (Ocean Fishes Beluga Sturgeon, n.d). Its eggs are harvested by fishers. Illegal fishing and international demand are huge threats.

The Tagbanuas catch certain fish species based on the position of the moon or the tide. They also share their catch among neighbors and relatives, avoiding wastage and overfishing. (Alave, 2012). They use hook and line method catching only what they need to feed their community. How different community uses sustainable fishing.⁹⁹

⁹⁴ Castro, P. & Huber, M .E. (2010). *Marine Biology*. (8th ed.). McGraw-Hill

⁹⁵ Chambers, R.C., & Trippel, E.A. (Eds.). (1997). *Early Life History and Recruitment in Fish Populations*. (1sr ed., pp 515). Chapman & Hall

⁹⁶ Ncar & Ucar. (2023, March 17). *Scientists identify heat wave at bottom of ocean*. Phys.org. <https://phys.org/news/2023-03-scientists-bottom-ocean.html>

⁹⁷ Newsela, *Sustainable Fishing*. National Geographic. Retrieved March 20, 2023, from <https://education.nationalgeographic.org/resource/sustainable-fishing/>

⁹⁸ Oceana Protecting the World's oceans, *Ocean Fishes Beluga Sturgeon*. Retrieved March 31, 2023, from <https://oceana.org/marine-life/beluga-sturgeon/>

⁹⁹ Newsela, *Sustainable Fishing*. National Geographic. Retrieved March 20, 2023, from <https://education.nationalgeographic.org/resource/sustainable-fishing/>

The development of harbours and urban centres in the coastal belt led to degradation of the natural habitat and eco-system.¹⁰⁰ In turn, over exploitation of natural resources resulted in eco-malady. (Leelakrishnan, 2021). The deteriorating condition of the coastlines necessitated wise planning and regulation of coastal activities. (Leelakrishnan, 2021). This led to the formulation of Coastal Regulation Zone (CRZ) Notification in the year 1991. (Leelakrishnan, 2021).

Notification 2011 gave way to CRZ Notification of 2019. (Leelakrishnan, 2021). As its introductory paragraph highlights, the object of the new notification is to conserve and protect the unique environment of coastal stretches and marine areas, besides livelihood security to the fisher communities and other local communities in the coastal areas and to promote sustainable development based on scientific principles taking into account the dangers of natural hazards and sea level rises due to global warming. (Leelakrishnan, 2021). The notification excludes the marine areas of the islands of Andaman and Nicobar and Lakshadweep. (Leelakrishnan, 2021). Absence of coordination among departments and between the Centre and states has been an obstacle in fostering a sustainable coastal zone management. (Leelakrishnan, 2021). The Swaminathan recommendation that the Ministry of Environment & Forests (MOEF) should have a funding mechanism denotes a pragmatic welcome strategy." (Leelakrishnan, 2021).

In Malina's words "a new Renaissance is under way, and at no time in human history have the challenge of a sustainable civilization on our planet been more daunting. It is surely through the work of these new Leonardos that we will change our ideas about the world and how to act in the world".¹⁰¹

Always having a check as the consumption with a concern in mind that, Is productions are sufficient to deal the demand? This mindset will certainly make change in behavior to regulate humankind from invasive mind and lead to sustainability.

Amalgamation of thoughts – The savior of Oceanic life

The theme of Earth Day 2023 is "Invest in our Planet". Investing in a green economy is the only path to a healthy, prosperous, and equitable future.¹⁰²

States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law¹⁰³ The concept of equity, sympathy and empathy is humans heart beat. It is better to be idle than turning to be an hindrance. In the concept of equity lies the Nation's development. We need to alarm ourselves that in the near future, technology can be the ruler and we will be the ruled. If so the advancement in humanoid, though the positive impact might end up as danger to human species. For example, if sex robots been given

¹⁰⁰ Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis.

¹⁰¹ Mahamane, A. (Ed.). (2016). *Diversity of Ecosystems*. (1st ed., pp 196). InTech

¹⁰² Earthday.Org. (2022, October 20). *Earthday.ORG announces theme for Earth Day 2023* [Press release]. [https://www.earthday.org/press-release/earthday-org-announces-theme-for-earth-day-2023-invest-in-our-planet/#:~:text=Washington%2C%20D.C.%20\(October%2020%2C,%E2%80%9CInvest%20in%20Our%20Planet.%E2%80%9D](https://www.earthday.org/press-release/earthday-org-announces-theme-for-earth-day-2023-invest-in-our-planet/#:~:text=Washington%2C%20D.C.%20(October%2020%2C,%E2%80%9CInvest%20in%20Our%20Planet.%E2%80%9D)

¹⁰³ United Nations Convention on the Law of Sea art. 235, para. 1

an recognition as person then there comes danger to the institution of marriage and family. Likewise dumping of debris turns debris to be a show piece than live species.

The International Oceanographic Commission (IOC) for the United Nations Educational and Scientific Commission (UNESCO) defines marine pollution as: "Introduction by man, directly or indirectly, of substances into the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazards to human health, or hindrance to marine activities and reduction of amenities."¹⁰⁴

The Third United Nations Convention on the Law of sea initiated a series of international agreements in an effort to define the use of oceans by all nations. They included the establishment of Exclusive Economic Zones.(EEZ's).¹⁰⁵ And the purpose behind the EEZ is hinder exploitations, preserve the resources, enrich their presence, conserve for future and regulate to achieve the goals. The United Nations Conference on Environment and Development at Rio de Janeiro, known as the Rio Earth Summit of 1992, is one example. It resulted in an agreement to preserve biodiversity on the planet. One commitment was to protect the interests of the traditional fisheries of indigenous people.(Castro, 2010).

Moreover, the Intergovernmental Panel on Climate Change (IPCC) says that several regions, such as the western Tropical Pacific, the South-west Pacific, the North Pacific, the South-west Indian Ocean and the South Atlantic, face substantially faster sea-level rise.¹⁰⁶ Though being a warm blooded animal, with the hypothalamus turning our adaptability to change in climate, but that is subjected to the scale of temperature leading to hypothermia and hyperthermia. Then the human life turn to be a de constructed pie. This adaptability is not so bestowed on cold blooded, by hiking temperatures we oven their lives.

Ecological damage has been considered also in two recent decisions of Italian courts, namely the decision of 30 July 1986 of the Tribunal of Messina and the decision of 30 March 1989 of the Court of Appeal of Messina. In both decisions the judges did not apply Italian domestic law but the provisions of a treaty to which Italy is a party, namely the International Convention on Civil Liability for Oil Pollution Damage (hereinafter referred to as the CLC) adopted in Brussels on 29 November 1969.¹⁰⁷ However, the two courts interpreted differently the expression "pollution damage" contained in the CLC, since, according to the first decision, ecological damage cannot be compensated whereas, according to the second decision, compensation has to be paid to the State for this kind of damage. (Francioni, n.d. pp 383).

States shall ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction.¹⁰⁸

¹⁰⁴ Salpekar, A. (2008). *Marine Pollution*, Jnanada Prakashan (P & D)

¹⁰⁵ Castro, P. & Huber, M .E. (2010). *Marine. Biology*. (8th ed.) McGraw-Hill

¹⁰⁶ United Nations. *How is climate change impacting the world's ocean*. <https://www.un.org/en/climatechange/science/climate-issues/ocean-impacts>

¹⁰⁷ Francioni, F., & Scovazzi, T. (Eds.). *International Responsibility for Environmental Harm*. (1st ed., pp.383).Graham and Trotman.

¹⁰⁸ United Nations Convention on the Law of Sea art. 235, para. 2

In the Amoco Cadiz pollution case the District Court for the North District of Illinois has stated in a first decision that the owner of the wrecked ship, the Standard Oil of New Jersey was liable, but the court had some difficulty in establishing the amount of the compensation to be paid. At the end only the material damage was compensated, without taking into account the ecological damage, which was considered as irrelevant. (Francioni, n.d., pp 6). The core and prime thought behind compensation theory is to ensure that victims are restored with justice by providing monetary relief to set right the loss and also the main reason is to mitigate or nib off the habitualistic minds of human predators, who determine their easy prey.

The observations of the Supreme Court of California in Mono Lake Case clearly show the judicial concern in protecting all ecologically important lands for example fresh water, wetlands or riparian forests.¹⁰⁹ The observations of the Court in Mono Lake Case to the effect that the protection of ecological values is among the purposes of public trust, may give rise to an argument that the ecology and the environment protection is relevant factor to determine which lands, waters or airs are protected by the public trust doctrine. (Divan, 2021)

Port State Measures Agreement (PSMA), the only internationally binding instrument specifically designed to prevent, deter and eliminate IUU fishing by denying port access to foreign vessels that engage in or support such practices.¹¹⁰ “Vessel Viewer,” which is currently in prototype and being piloted by several countries (with more trialing in 2023), has been designed explicitly for port inspectors. (Holland, 2023).

Protection of shipwrecks and underwater sites from commercial treasure hunting is being sought by the Convention on the Protection of the Underwater Cultural Heritage.¹¹¹ We consider human existence is nowadays co-located in the continuum and symbiotic zone between body and flesh – cyberspace and data – and the hybrid properties of the physical world.¹¹² The continuum generates a biocybrid zone (Bio + cyber + hybrid) and life is reinvented. Our biocybrid systems are founded on networked cyber infrastructure and physis territory actions. (Mahamane, 2016). These actions use local mobile technologies and advanced scientific methods for analyzing and evaluating biodiversity research on continental-scale environmental issues. (Mahamane, 2016). Thus the dormant black letters forming phrases in the law books of World Nations should be given life to with a strong belief that even the vegetative stage can be brought back to life. The only key components needed is vigor with a tint of humanity.

Conclusion

“If we wipe out the fish, the oceans are going to die.

If the oceans die, we die”

¹⁰⁹ Divan, S., & Rosencranz, A. (2001). *Environmental Law and Policy in India*. (2nd ed.). Oxford University Press.

¹¹⁰ Holland, J. (2023, January 3). On the dark side: How technology helps to expose potential IUU fishing on the deep sea. Global Seafood Alliance. <https://www.globalseafood.org/advocate/on-the-dark-side-how-technology-helps-to-expose-potential-iuu-fishing-on-the-deep-sea/>

¹¹¹ Castro, P. & Huber, M. E. (2010). *Marine. Biology*. (8th ed.) McGraw-Hill

¹¹² Mahamane, A. (Ed.). (2016). *Diversity of Ecosystems*. (1st ed., pp 184). InTech

- Paul Watson¹¹³

The Earth spinning on its axis has witnessed many surprises and shocks. Nearly 71% of earth surfaces with water and the remaining being land. And so water is the biggest resource which all species has witnessed and it is a ray of hope just like light. Human cannot imagine their existence without light, water and air. Fifty percentage of the changes on Earth is from humans and other from nature. When we think of nature the thing which strikes our brain is greenery, soothing sounds, pleasing aroma and what not. When the same feel is suddenly disturbed as a day dream it is always unimaginable.

Latest data from the World Meteorological Organization shows that global mean sea-level reached a new record high in 2021, rising an average of 4.5 millimeter per year over the period 2013 to 2021.¹¹⁴ We consider our responsibility and the urgent attention to life in our country's huge territory, while facing the effects of an endemic infection of tropical climates and working for the preservation of the Biomes in Amazon Forest, the lung of the planet. (Mahamane, 2016). Since water is the basic source of life it is very crucial need to take care and protect the aquatic biomes. The availability of initiative measures should be made and public must be educated at large to mitigate the threats. Despite there are very many initiatives, cutting down the challenges for survivability, still remains. It is always the marine industry which thinks of cutting down the carbon emissions.

The most realistic way to lower this number or to keep it from getting astronomically higher would be to reduce our carbon emissions by burning less fossil fuels and finding more carbon sinks, such as re-growing mangroves, sea grass beds, and marshes, known as blue carbon.¹¹⁵ Whenever we think of alternative source of energy the one important gaseous form comes in our minds is go-bar gas, the prime source of this eco friendly alternative is cow dung. And this game changing bio gas has contributed much for Indian economy. Likewise the recent propulsion are hybrid vessels with an alternative means. French shipping company Brittany Ferries has commissioned the world's largest hybrid ship for its future fleet, the company announced this week, marking another milestone in the industry's route to de-carbonization and the 639-foot Saint-Malo will be operational in 2024.¹¹⁶

Another idea is to remove carbon dioxide from the atmosphere by growing more of the organisms that use it up: phytoplankton. (Ocean Acidification, n.d.). Adding iron or other fertilizers to the ocean could cause man-made phytoplankton blooms. This phytoplankton would then absorb carbon dioxide from the atmosphere, and then, after death, sink down and trap it in the deep sea. (Ocean Acidification, n.d.) However, it's unknown how this would affect marine food webs that depend on phytoplankton, or whether

¹¹³Stubbs, P. (2019, January 28). Paul Watson – whale warrior. The Environment Show. <https://www.environmentshow.com/paul-watson/>

¹¹⁴ United Nations. *How is climate change impacting the world's ocean.* <https://www.un.org/en/climatechange/science/climate-issues/ocean-impacts>

¹¹⁵ The Ocean Portal Team, *Ocean Acidification*. Smithsonian. Retrieved March 20, 2023, from <https://ocean.si.edu/ocean-life/invertebrates/ocean-acidification>

¹¹⁶ Hagerty, C. (2022, June 23). The world's largest hybrid ship will set sail in 2024. Popular Science. <https://www.popsci.com/technology/large-hybrid-ship-saint-malo/>

this would just cause the deep sea to become more acidic itself. (Ocean Acidification, n.d.) The National Research Council committee encourages the acoustical oceanography community, marine mammal biologists, marine bioacousticians, and other users of sound in the ocean, such as the military and oil industry, to make greater efforts to raise public awareness of fundamental acoustic concepts in marine biology and ocean science so that they are better able to understand the problems, the need for research, and the considerable potential for solving noise problems.¹¹⁷

Just like the landfills pollution which causes degradation of air by disseminating gases because of the dumping of waste and degrading and polluting land. The disposal of solid waste has been a critical urban problem because areas suitable for the dumping of these voluminous materials are becoming scarcer.¹¹⁸ Due to this reason the ocean has been used as a dumping ground for solid waste. And these not only pollutes the water but the turbidity makes unworthy for aquatic living.

Environmental Damage Compensation (EDC) is a quantifiable and reasonably estimable future expenditure as on date for restoration of environmental damages caused due to anthropogenic release of pollutants in excess of permissible limits or unauthorised activity.¹¹⁹ Environmental damage compensation is apportioned to one or more factors relating to degradation of air quality, water resources, soil, groundwater, adverse effect on human health, loss of eco-system services, including damages caused to property, natural assets and productive assets.(CPCB, 2022). Thus, EDC includes cost of assessments, cost of restoration and compensation for direct and indirect damages caused to human, property, flora, fauna including ecosystem functions. (CPCB, 2022).

States shall co-operate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.¹²⁰

Deep Sea Mining is required for business to trawl for nickel, manganese, and cobalt to build electric cars and wind farms. But it would cause “extensive and irreversible” damage to planet.¹²¹ This Plan cause widespread pollution, destroy global fish stocks and obliterate marine eco systems. (Mckie, 2023) “The newly agreed UN High Sea treaty signifies a clear global recognition of the importance of ocean conservation but collaborative efforts are still needed to keep the brakes on deep-sea mining.” (Mckie,

¹¹⁷ Ocean Studies Board. (2003). Ocean Noise and Marine Mammals. The National Academic Press. <https://www.pdfdrive.com/ocean-noise-and-marine-mammals-d170723407.html>

¹¹⁸ Salpekar, A.. (2008).Marine Pollution, Jnanada Prakashan (P & D)

¹¹⁹ Central Pollution Control Board. (2022). General Framework For Imposing Environmental Damagae Compensation. Ministry of Environment, Forest and Climate Change. [https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20\(EDC\)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence](https://cpcb.nic.in/openpdf.php?id=UmVwb3J0RmlsZXMTQ5NV8xNjc5NzkyNjg5X21lZGlhcGhvdG8yOTM4LnBkZg==#:~:text=Environmental%20Damage%20Compensation%20(EDC)%20is%20a%20cost%20to%20be%20paid,inadequate%20control%20equipment%20or%20negligence)

¹²⁰ United Nations Convention on the Law of Sea art. 235, para. 3

¹²¹ Mckie, R. (2023, March 26). Deep-sea mining for rare metals will destroy ecosystems, say scientists.The Guardian. <https://www.theguardian.com/environment/2023/mar/26/deep-sea-mining-for-rare-metals-will-destroy-ecosystems-say-scientists>

2023). Since marine resources are rich, it creates an electromagnetic field like attraction for people who mine them for the mineral resources. Deep sea mining is the need of the hour which seeks for immediate attention.

Instead of building sea walls, bio-shields and coastal green belts with mangroves, sheltered plantations along the habitations and sand dunes, mudflats and lagoons will go a long way in providing bio-defence against Tsunami-like natural disasters. Earthen bunds can also be encouraged wherever possible.¹²² These Earthen bunds aid in rainwater percolation and the same time prevents soil erosion. By construction of these, fishermen can live a fear free life.

Conversion of agricultural farms into commercial aquaculture on a large scale transforms traditional water-fed use to pump-fed water. Use of submarine pipelines from the sea makes groundwater saline, obstructs natural drainage for flood water, blocks fishermen and the public to have access to the sea, destroys mangroves and causes pollution of ponds and source water. Abandoned shrimp farms and ponds remain virtually unusable for any other purpose. (Leelakrishnan, 2021).

Thus the roaring sounds by the oceans is many a times unheard by the human species. Turning us deaf to the unheard screams of the voiceless proves us merciless. United we stand is the only means to achieve threat free marine ecosystem.

Suggestions

By narrowing down, the following suggestions can be incorporated for the sustainability of the ecosystem and to be more specific for ensuring the stability of the marine world and fisheries.

a. Taking care of the nature and environment by appreciating the beauty without interferences should be prime most fundamental duty of every citizen not only constitutionally but also morally.

b. There is a popular saying, 'You are what you Eat'. Eating more than what we need not only going to affect health but it is also greed, as we dump both body and mind. Survival is not about showing dominance but also about intellectual ways of living. Words are easy to say but difficult to be practiced. Human should think of live and let live when it comes to dining of aquatic species.

c. Pollution free environment not only relates to acidification, oil spilling etc but also from what we regard as less important, nothing but black water. It is an important global problem. Blackening of water ie introducing human and waste like urine and faeces in the water which eventually turbid the water. In the name of personal hygiene human should ensure that it should not end up in hindrance.

d. Initiatives to be taken by the government and the courts that Marine Protected Areas to be safeguarded, not only by coming up with Red list but also the effectful measures to implement by providing enhanced punishments for law breakers.

¹²² Leelakrishnan, P. (2021). *Environmental Law in India*. (6th ed.). LexisNexis

e. Deep Sea Mining, if an inseparable need should be performed without disturbances or damage to marine environment. In many countries illegal sand mining is an offence, which drastically causes erosions and threats aquatic lives as well. Just like the provisions of Mines and Minerals (Development and Regulation) Act intensifies punishment similar things should be extended to marine as well.

f. Ocean always seems to be an easy place to discharge and dump waste, be its from industrial effluents or human discharge etc. Ocean dumping needs to be addressed with iron hand as it is the slight deviation which has all capacity to accelerate as an effectful deviance. Educating with civic thought should be a prime base for addressing these issues.

g. Artificial Intelligence has started taking domain of human life style. The same technology has intruded into oceans as well. Maritime Artificial Intelligence is expected in predicting oceanic changes and also aids marine biologists. AI can be extended in locating the marine lives and monitoring them just like the ways we monitor our loved pets by pampering it. These can be an inspiration to induce people to adopt marine lives.

h. Sustainable eco-tourism will always make an ethical way to add economy. It creates a sense of noble thinking to watch the nature in its own pace with minimal or zero hindrances.

i. Sustainable fishing practices to be learnt and adopted by other countries, similar to the ones followed by Tagbanua people or from the ones in South Pacific or from native Hawaii. Though these kinds of fishing are very primitive yet effectful.

j. Human should have a concern that in the name of beauty, marine kingdom should not be made ugly. Instead of using chemical sunscreens which endangers aquatic lives, we can go for biodegradable sunscreens.

k. The effectful implementation of the Environment Impact Assessment should be carried out with adequate support from State.

l. The futuristic fluroscense plants with glowing technology is considered to be a boon to farmers. Similar kind of technology can be incorporated provided if its safe and stable to identify polluted marine areas.

m. The awareness about the science of geo-engineering and cutting down of carbon emissions should be made understandable for a progress of marine biology.

To wrap, as the saying goes ‘ what wont bend at five will not bend at fifty’. Despite State taking all initiatives and the laws taking stringent measures, parents has an inbound duty to educate their children’s about compassion and respect towards other lives for a better hindrance free living.