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UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Can the Baltic Sea Die? An Environmental Imaginary of a Dying Sea

Jesse D. Peterson

Death seems to happen to the living; yet, around the world, different communities talk about dead or dying seas, lakes or rivers. From the Dead Sea to the Aral Sea to the Baltic Sea, these waterbodies have been referred to as dying, which lead many to wonder whether these seas (and other waterbodies) can be saved and restored to 'health.' This discourse of dead and dying waterbodies spurs counterarguments that seek to curb, challenge or upset such dystopic characterizations. The group running the Ocean Health Index, for instance, argues that oceans cannot die, making the case that waterbodies are not living organisms (OCH, 2020). Though this debate may never be settled, these conversations of hope and denial, pollution and harm, invite reflection upon what exactly is meant regarding the life or death of waterbodies. It begs the question: can a waterbody die?

The significance and relevance in asking this question stems from taking seriously the societal contention that seas die or do not as well as attempts to redefine life and death as ecological and environmental issues linked to the Anthropocene epoch. Concerns over the magnitude of human impacts upon environmental habitats and physical processes lead scholars to reconsider human relationships to dying, particularly in respect to the effects of industry, colonialism and pollution as well as the bio- and necropolitical control mechanisms exerted over nonhuman animals, such as invasive species and 'unloved others' (Rose and van Dooren, 2011). Nonetheless, inquiry into the lives and deaths of entities typically considered non-living, such as waterbodies, remains absent. This chapter aims to address this silence, in part, because if industrialized societies understood places, objects and processes

as literally (rather than metaphorically) being alive or dead (Lidström et al, 2022), profound philosophical, ethical and political consequences would need consideration.

To think with the tensions of those things that cannot die but seem to be in danger of dying anyways, I focus on a discourse of dying waterbodies, using the Baltic Sea as a particular case. Governmental organizations, non-governmental organizations, media and scientists agree, society must 'save' the Baltic Sea and restore its 'health' (*Sveriges Radio*, 2014; Hinton, 2017). As one of the most polluted seas in the world, it suffers from mercury pollution, ecological disturbance caused by heavy transport, parasites and invasive species, munitions and chemical dumping legacies, increasing water temperatures, low salinity, overfishing, cultural eutrophication, harmful algal blooms and extensive dead zones. Yet, as already mentioned, such narratives of degradation invite challenges. For example, one of the objectives of the Baltic Sea Science Center, upon its inauguration in Stockholm during 2019, was to convey that the Baltic Sea was not a dead sea ('det är viktigt att förmedla att Östersjön inte är ett dött hav') (Östersjöcentrum, 2019).

To explore this sea as one that is dying, I present key physical attributes of the Baltic Sea as depicted in scientific accounts with support from mainstream political and cultural concerns related to the impacts of cultural eutrophication on the sea's status. This presentation of physical attributes gets categorized into three main activities that naturalize, value and reify certain characteristics of the sea as those upon which its death depends. This chapter thus shows what are the dominant, normative ways of thinking about the Baltic Sea as dying as well as the specific features and their performance – or values – upon which this understanding rests. Characterizing the Baltic Sea in this manner helps to reveal to how different versions of the Baltic Sea come into being. It discloses dominant paradigms that govern the 'life' or 'health' of a waterbody and thereby illustrate how alternatives threaten a waterbody's life. It helps localize for whom a healthy and dying sea benefits. In sum, this chapter seeks to illustrate how the Baltic Sea becomes a dying sea, in part, through claims about its ontological reality. Second, it aims to articulate how a dying Baltic Sea is one simplified version among many other possible seas. Finally, it seeks to know for whom does a dying Baltic Sea serve, offering reflections on both emitters and environmentalists.

The Baltic Sea as 'natural' object

Scientific accounts about the Baltic Sea's state contribute to the 'naturalization' of the sea as ahistorical and independent of people through ontological claims. This 'naturalization' happens through descriptions that paint a picture of what the sea *is*. Accordingly, the main thrust of such accounts constructs an imaginary of a dynamic sea, one of extreme ontological variability. Being

the fifth characterization of water conditions in this locale – described in its multiple iterations as the Baltic Ice Lake, Yoldia Sea, Ancylus Lake and the Littorina Sea – the Baltic Sea's legacy displays significant morphological changes over the centuries. Early in its history, the water in this geographic region was largely covered with ice; whereas, today, the Baltic Sea generally freezes only in some areas during the winter months (Rydén et al, 2003). Such variation points out how waters in the sea can undergo all possible phase changes between solid, liquid and gaseous states. In its previous states, the water oscillated between a lake and a sea, and – due to its 'exceedingly low salinity' and 'almost land-locked basin' with a small outlet to the North Sea through the Kattegat and Skagerrak straits – it has been and may continue to be thought of and treated like a lake (Leclerc, 1797: 4; Björck, 1995).

This 'lake,' however, is not really a lake as a result of the variability and concentration of salts within it. Sometimes portions of the Baltic Sea, such as the Gulfs of Finland and Bothnia, have been characterized as having lacustrine, or lake-like, conditions instead of the Baltic in its entirety (Segerstråle, 1969: 169–170). Also, the more saline waters in the Baltic's depths create a 'strong permanent halocline,' which 'prevents vertical mixing of the water column' (Zillén et al, 2008: 4). That wave and tidal action in the sea are not as strong as in the open oceans means that these water layers mix less than those in the oceans (Segerstråle, 1969: 170). Moreover, several deep basins lead to 'instability and local variations' in salinity levels throughout this sea (Segerstråle, 1969: 170). Hence, the saltier waters and their (lack of) diffusion in the Baltic Sea complicate the geomorphological imagination of the sea as lake or ocean.

In order to address such confounding saline conditions, the sea's waters have been labelled as 'brackish' water. Such classification simplifies and homogenizes the variable gradient of salt content in the waters, while also making the sea less than ideal for some. In 1858, the British naturalist Edward Forbes argued that the brackish water impoverishes the Baltic as either sea or lake. He suggests that the 'deleterious influence' of brackish water limits biodiversity, allows for intrusion of freshwater species, permits commingling between fresh and saltwater species, and leads to 'overanxious patriots' doing bad science (Forbes, 1859: 84, 87, 89–90). Though the Baltic offers little by way of biodiversity as a 'new' sea and some fauna, such as mussels, do not grow particularly large as a result of the brackish waters, saline conditions and fauna in the Baltic have also varied significantly over the centuries. For instance, conditions varied as a result of saline fluctuations in the 1930s, 1940s and 1950s, when salinity increased in the Baltic Sea as a result of decreases in riverine outflow to the sea as well as meteorological changes. Such changes led to an 'enormously increased abundance of cod' as well as other commercially important fishes but also the 'invasion' of stenohaline animals – organisms that cannot tolerate high fluctuations in salinity levels.

Salinity increases also contributed to stagnating saline bottom waters in the deeper basins, leading to 'practically lifeless deserts' and the accumulation of large amounts of phosphorous (Segerstråle, 1969: 172–175). Variations in salt levels in the Baltic Sea thus figure as an essential condition for determining the sea's value, including its waterbody classification, uses and health.

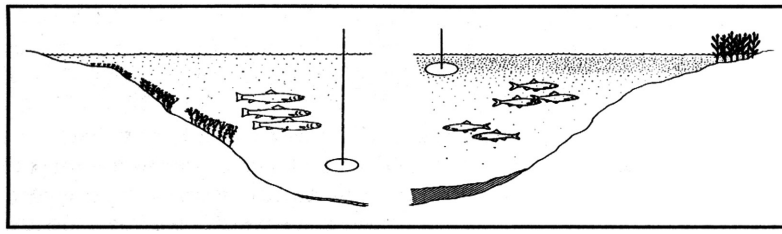
As far as other qualities are concerned, the Baltic has mediocre to poor visibility. It also gets described as shallow and encompasses about one quarter the size of its drainage basin. It is described as navigable and relatively cold, offering a range of recreational activities, such as sailing and bathing. These features have supported the main ways by which humans have used the Baltic Sea throughout time: from a region of missionary zeal to trade and pilgrimage, to dominion and conquest, to research subject, and to a site for political and cultural redefinitions (North, 2018). They point to concerns related to transportation over the sea, salinity, food sources, recreational opportunities and aesthetic concerns, biological diversity, and water cycling. The Baltic Sea, therefore, means many different things, even ontologically speaking. Ultimately, a broad assessment of the claims about the Baltic Sea's physical attributes through deep time displays 'long-term variability' in geomorphology, temperature and climate, salinity, biodiversity, and hypoxia (Zillén et al, 2008: 5).

Such dynamism contributes to making the sea both resilient but also vulnerable. High degrees of variability ought to make a sea that should offer a great deal of flexibility in terms of challenges to its ontological status as a sea. Nevertheless, the sea often gets described as 'unusually sensitive' (Rydén et al, 2003: 257). Such variability tends to be the point of such characterization, exploring the limits of what constitutes the sea and that which does not. Even so, as in the case of salinity in the Baltic, this variability can lead to certain physical conditions being valued over others. In many respects, therefore, the general tendency of these claims-making activities depicts ontological conditions stripped of value or meaning, albeit a closer look can illustrate subtle forms of valuation. In this way, they imagine the Baltic Sea as a 'natural' object, one that predominantly leans towards depicting it as a dynamic, yet vulnerable sea, one susceptible to change.

Diagnoses as valuing nature

Values about the sea, including those made in ontological claims about it, are further refined through diagnoses that overtly value certain ontological features of the Baltic Sea over others by describing harms. Unlike the preceding ontological claims, diagnoses contribute to an imaginary of what the Baltic Sea *ought to be*, adding to and refining what gets labelled as 'natural' about the sea and, more importantly, demarcate what is 'unnatural' for the sea. Though the Baltic Sea faces various challenges, I focus on nutrient

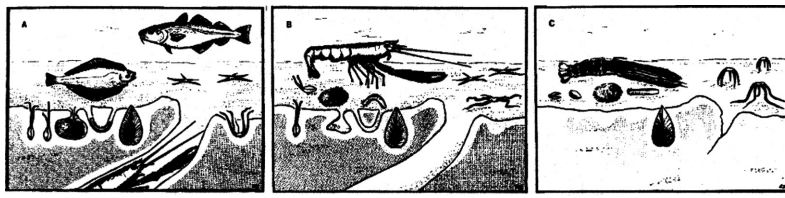
Figure 4.1: Depiction of 'How water bodies change: Oligotrophic conditions versus eutrophic conditions'



Source: Rydén et al (2003: 269)

pollution impacts, which have become key drivers behind regional policy directed at environmental health, economy, safety and aesthetic value of the Baltic Sea (North, 2015, 2018). Such impacts resemble systemic threats to the Baltic Sea's 'life' as indicated previously. For example, in Figure 4.1, we see oligotrophic (that is, nutrient poor) and eutrophic (that is, nutrient rich) conditions pitted against each other. The image (including its description) reifies eutrophic waters as 'bad' through the separation between the water environments and their arrangement. This separation in the waterbodies implies a mutually exclusive relationship in which eutrophic waters and oligotrophic waters do not mix. They are different seas, in which the transition from one to the other gets represented as a literal 'leap' over a gap. Reading conventions from left to right further frame the oligotrophic status as the default condition and neutral, leading the reader to assume eutrophic waters as less desirable. As such, the image assigns positive and negative values related to oligotrophic and eutrophic conditions, highlighting key values about water bodies that eutrophication 'harms'. These values include visibility, plant growth and location, biological composition, and deposition of sediments and organic matter on the sea floor. Figure 4.2 further expresses deterioration of marine conditions (in the same left to right fashion), highlighting the explicit values placed upon not just species diversity but species of greater taxonomic complexity and the importance of dissolved oxygen. According to such representations, a healthy sea has plants that do not crowd the shoreline or disrupt one's ability to see into the water and supports 'higher' forms of life. These images succinctly capture anxieties over increases in primary production, algal blooms, chlorophyll A concentration, deposition of organic matter on sea bottoms, microbenthic biomass, frequency and severity of oxygen deficiency in bottom waters and decreases in water transparency and depth penetration of bladderwrack, a common seaweed found in the Baltic (Rydén et al, 2003: 269, 277, 274; Andersen and Laamanen, 2009). Setting ecological forms and qualities against others allows for ecological changes to be valued as positive or negative.

Figure 4.2: Oxygen ratio effects on benthic fauna in the Kattegat: 'A: Fish and the benthic macrofauna at normal oxygen levels. B: At 15% oxygen saturation fish and large animals are gone. C: At 5–10% saturation all higher life is gone. (After Baden et al., 1990)'



Source: Rydén et al (2003: 277)

Framing oligotrophic conditions as positive and eutrophic conditions as negative defines the limits of acceptability for the variability disclosed through ontological claims. Thus, diagnoses contribute to making some forms and qualities of the Baltic Sea not just undesirable but also 'unnatural'. Algal blooms, for example, exemplify direct challenges to an oligotrophic value system. They cloud visibility and water transparency. They reduce cod breeding grounds while stimulating – but, possibly, also restricting – herring growth. Filamentous algae will also grow on other kinds of algae, like bladderwrack, killing them in the process (Rydén et al, 2003: 272). Some algae release toxins which cause illnesses or kill animals, including people. They deplete oxygen in the seas and convert water into hydrogen sulphide (H_2S). Resulting low-oxygen environments may kill benthic animals, change nutrient biogeochemical cycles and further promote algal blooms (Zillén et al, 2008: 4). According to Swedish newspapers as far back as the 1970s, algae bring fisherman to feelings of 'despair' ('förtvivlade') and lead to the sea's death ('havets död' or 'havsdöd') ('Slemmiga grönalger undersökta trivs bara i bukten,' 1978; Danielson, 1981; Strömberg, 1984). Diagnoses about algae imply that algae kill the sea by disrupting human use of it, releasing toxins, growing too much, responding positively to human pollution, and also polluting the seas. All these activities contravene what good algae are supposed to do: to get eaten, to medicate, and to get converted into energy. Algae that support what humans desire about them and the sea, therefore, merit protection while the algae that upset these desires do not (Blåstångenutrotningsotad, 1982).

Diagnostic claims about the Baltic Sea, thus, construct the possibility for it to die. By constructing normal conditions and abnormal conditions, diagnostic claims do 'boundary work,' which excludes and makes algae and other features of the sea aberrations. They suppress and simplify how algae function as agents of ecological change, framing algal presence in the Baltic Sea more a result of indirect human-driven causes than the activities of

algae themselves. By framing this ecological activity in terms of a nature/culture separation, algal blooms get understood according to cultural and moral terms, which signify they can be subjected to ethical, political and technocratic responses that are less sensitive to their more-than-human condition. Algae become invaders and pollutants. Diagnostic claims about the Baltic Sea thus police and protect the values set upon certain features and qualities in the sea.

Treatment

In step with those who diagnose the sea as living or dying are those who would do something about it. Efforts to remediate or recreate 'undisturbed' conditions also highlight ways by which the sea can be understood to be dying. Such efforts reify the diagnoses as real. They help give credence to the claims of certain ontological features as unnatural while positing that a natural(ish) sea can be pursued or possibly achieved in the future. Hence, claims about what ought to be done to 'save' the sea paint the most concrete picture regarding which ontological features the sea's life and death depends on.

Most efforts to maintain the Baltic Sea as oligotrophic attempt to reduce nutrient loading through changes in agricultural practices although some efforts have sought to change the sea directly. For instance, multiple geoengineering proposals for resolving hypoxic conditions in the Baltic Sea exist, offering to 'improve' conditions by changing ecological relationships, altering the sea and its waterflows, or by introducing oxygen into the water directly. Reports on the Box project, for instance, described its pumps as 'pacemakers' and noted that its researchers 'literally pumped life into the fjord' ('Forskarna…har bokstavlingen pumpat liv i fjorden') and that they were 'waking life' in the dead sea bottoms ('det går at väcka liv i döda havsbottnar') (Grill, 2012). Typical of other geoengineering projects, these pumping efforts are also described as enabling control of disturbed ecologies or as possibly being able to heal them using medical metaphors (Luokkanen et al, 2014). Such projects seek to physically alter and reshape the sea to produce an artificial 'naturalness' that supports human use of the sea and all within it. Hence, remediation efforts are similar to research that tries to fix a date and establish 'normal' sea conditions as they appeared before large-scale human impacts. Scientific efforts that invariably depict or seek to recreate environmental conditions and ecological processes that support the use of the Baltic Sea end up informing us about its dying, often as a result of leaving their conclusions up for other actors to politicize. Attempting to stabilize or make controllable certain ontological aspects of the sea, these activities complete the process by which the Baltic Sea can be claimed to die.

The environmental imaginaries of waterbodies

Thus far, I have shown how the life and death of the Baltic Sea presented through the preceding claims depends upon certain features and qualities of the sea. This implies two key insights: first, a living and dying sea are not the only kinds of imaginings that are possible; and, second, the death of the Baltic Sea could rest upon other forms of its ontological qualities, meaning that its death occurs in a particular way. Thus, to help contextualize how the Baltic Sea dies as well as see how other environmental imaginaries of its dying are possible, we need to take a step back and imagine how countless possible other Baltic Seas could come into being.

As this chapter demonstrates, we come to know the sea through various means that build upon each other. We know waterbodies through immediate experience. Second, we come to know waterbodies through ontological claims made about the sea. For example, one may or may not feel water evaporating from the sea's surface, but one cannot bodily sense the claim that the Baltic Sea experiences a net water loss of -185 km3/year due to evaporation (Swedish Meteorological and Hydrological Institute, 2010). That is, both phenomena (that is, being) and onto-epistemological representations of the sea play into its meaning and how it is perceived, interpreted and treated. As science studies scholar Karen Barad argues, we do not know the world without being in the world (Barad, 2003: 829). We do not know the sea without simultaneously being with the sea. That is, the Baltic Sea can only be ontologically 'true' if society can make it correspond to our own imagination of it (Latour, 1983; Bird, 1987: 259–269). A socio-ecological construction of the sea relies upon conceptual and physical properties that support its continuation as a functional ordering of human–water(body) relationships. Hence, this second layering of 'knowing' the Baltic Sea tends to collapse into the first, leading one to confuse the representation of nature with 'reality.' Yet, not all ontological claims constitute the main value of a waterbody. Thus, certain claims take precedence, simplify the sea, and take shape as an environmental imaginary that functions as a 'hegemonic construction' (Linton, 2010: 9).

That a hegemonic construction of the Baltic Sea comes into being implies that alternate conceptions about the sea can arise. Different conceptions abound when one considers that the various substances, landforms and organisms that contribute in the making of society's version of the Baltic Sea also come into being through *their own* onto-epistemological relationships with humans. Water, animals and landforms, for example – understood as part of the sea but also separate from it – get imagined in their own unique ways. And, any specific conglomeration of some of these conceptual, physical and sensorial experiences of the sea in different times and places combine into the specific set of onto-epistemological relations that govern how humans

organize their lives around it. Because such diverse sets of possible seas can be produced – many of which are not compatible – means that the question as to whether or not the Baltic Sea can die could be answered differently in regard to the concepts, forms and qualities that the sea encapsulates and which humans focus upon for their interpretations. For instance, in cultural anthropologist Veronica Strang's *The meaning of water*, dead creatures pollute streams, rivers or lakes while they do not pollute seas or oceans (Strang, 2004). From this example, something about the volume, or perhaps the freshness rather than saltiness, or even the proximity or uses of the different waterbodies in question plays into perceptions of harm and degradation as well as life, death and not-alive. Hence, a spring might die in a different or similar way to the sea. For instance, different aspects of water might be focal points for asserting a healthy sea, such as its buoyancy or reflectivity rather than oxygen content or clarity. Put differently, if society preferred a eutrophic sea over an oligotrophic sea, then the characteristics upon which the dying Baltic Sea rest would be the main conditions upon which its life depended. Thus, the Baltic Sea could be constructed as different kinds of sea, which highlights how a dying Baltic Sea rests fundamentally upon some but not all its onto-epistemological characteristics.

It should therefore be of no surprise that the Baltic Sea is dying. A dying Baltic Sea illustrates a marked shift in the sensorial experience of the sea as phenomena as well as a disruption of common expectations that have driven its use for centuries. When the onto-epistemological conditions of what makes a waterbody alive start to change, then this waterbody can be interpreted as dying. Or, alternately, when such conditions continue to conform to human expectations (most often by remaining stable), water may be living and alive.[1] Hence, the Baltic Sea is 'dying' because society currently fails in its attempts to recreate the hegemonic environmental imaginary of its value. Put another way, the sea as phenomena defies the imagination of the 'natural' Baltic Sea by accommodating changes that perform the sea in ways that society finds undesirable. These changes – such as those embodied by eutrophic waterbodies – are therefore valued as detrimental and those things which contribute to their existence get labelled as pollutants. Cultural eutrophication and other forms of pollution are what geographer Jamie Linton would call 'hydrosocial hybrids,' which arise out of the modern constitution of water as a risk-free resource (Linton, 2010: 190). Like most seas, the Baltic gets treated as a dump site and has been for centuries. Doing so has led pollution to test the limits of major tenets of modern water. Yet, because water and society must be thought of as separate, 'these hybrids are not recognized for what they are' (Linton, 2010: 190). Threats to the seas tend to actually be threats to human use of the seas, as plainly seen in, for instance, this 1974 newspaper headline: 'Tång i Propellern: Ett Nytt Hot till Sjöss' ('Seaweed in the propeller: A new threat for the sea'). In addition,

the Baltic's waters become wastewaters because nutrients lose their value immediately after being applied to cropland and then reappear as intrusions within runoff (Thompson, 2017: 232). Hence, the substances that make up Baltic seawater invariably get parcelled into distinct categories: that of seawater and water pollution. Doing so allows for marine pollution to be considered an additive to seawater rather than part of its socio-ecological mix or solution, leading to activities that keep social, political and ontological solutions separate from each other (Linton, 2010: 199). That is, changes to highly valued ontological aquatic features tend to require technoscientific solutions more so than social or political solutions or a combination thereof (Linton, 2010: 195). In this way, water pollution not only threatens human lives but also the lives of waterbodies (Strang, 2004: 79).

Conceived of in this way, life and death happen in relation to onto-epistemological understandings of physical, chemical and biological phenomena in relation to social and cultural particularities. The logical extension of this implies that anything can have a life and a death for humans, and this division comes at the juncture between physical, social and cultural change that disrupts a person's chosen values they attribute to those phenomena. In other words, death occurs when a qualitative relational change takes place, most often when precipitated by physical transformations that no longer can accommodate the as-of-this-moment relational exchanges. These changes are spatio-temporal signs indicating the start of newly forming relationships that are not entirely within human control. Hence, contemporary disruptions to climate, seas, landscapes and soils invite each of us to reconsider dominant modes of thought that propel significant and unintentional physical alterations on and within the vicinity of this planet. According to this model, to be living requires stable, enduring physical forms and qualities that follow predictable patterns and that also satisfy relational – whether human or not – expectations of value as well as managerial schemes and programmes.[2] From this perspective, death and life are both part of the sea's environmental imaginary, and thus, can be made attributable to any phenomena, not just organisms.

For whom the sea dies

Claims made about the sea work together forming a dominant picture of what the Baltic is and does while both providing the grounds for as well as restricting other possible representations of the sea. A Baltic Sea comes into being through claims-making activities regarding: what the sea is; what the sea ought to be; and how to maintain the sea as such. In the case of eutrophication, claims-making activities articulate that the Baltic Sea ought to support higher, more complex life forms in 'appropriate' places; ought to be clear and clean; and ought to be fresher rather than saltier (to its

detriment). Freshwater is preferable to saltwater due to the more important value placed upon prevailing environmental conditions (which dovetails with continuing discourse that suggests viewing the sea as a lake). Thus, the sea's main environmental imaginary pins the life and death of the sea upon its water. In this scenario, changes to the Baltic Sea's water that depart from its 'natural' state lead to the death of the sea. This chapter has attempted to show that the Baltic Sea that can die is an environmental imaginary formed, in part, through claims about its onto-epistemological reality. Moreover, it has demonstrated that this construction is one simplified version among many other possible constructions.

For whom, then, does this imagination of the sea serve? Who gains and who loses when a sea lives or dies? Because natural phenomena – such as a sea and its water – come into being through socio-ecological relations, we need to understand the politics of nature, taking time to answer 'the question what water is' as well as which relationships gain primacy (Linton, 2010: 223–224). A sea that can support higher, complex life forms benefits these kinds of organisms, in that they are provided with a liveable habitat. Other forms of organisms potentially lose out. Such conditions favour certain forms of fishing and aquaculture over others, supporting the continued consumption of predatory fish over other aquatic organisms. A sea that is clear and clean supports tourism and recreation. It increases the aesthetic value of the sea for humans. Scuba divers, bathers and beachgoers, and recreational boaters all benefit. If sunlight can pass through its waters, deeper into the sea, certain species of algae and seaweed benefit. It supports coastal dwellings, even if they are a significant source of non-point source pollution. A sea that is fresher rather than saltier supports the local character of the sea. It serves desalination operations and the use of water for irrigating crops or use in husbandry. Fresher water also supports the potential for the seawater's use in industrial operations, such as nuclear energy. Interestingly, as a major contributor to atmospheric deposition of nutrients in the Baltic Sea, shipping neither benefits or loses from such onto-epistemological shifts. In many respects, then, a living Baltic Sea predominantly serves status quo social, cultural and economic relationships to the sea.

Nevertheless, some of these conditions invite conflict. Oligotrophic conditions can perpetuate the exploitation of aquatic goods and services as well as help maintain practices of polluting and disposing waste into the seas. For instance, a clean and clear sea appears capable of handling more trash to be dumped in it while the preferred biocommunity sustains traditional and contemporary fishing practices and management. However, a living sea can also thwart these relationships. The kinds of aquatic organisms desired challenges some forms of polluting activities and pollutants but not others. In addition, environmentalist-oriented non-profits seeking to 'save' the Baltic Sea from pollutants would appear to want a living sea also, albeit perhaps

for other reasons. Since a living sea (as well as a dead sea) also benefits those who would exploit the sea, one would expect environmentalists to side with the claim that the sea is dying. From their perspective, it is perhaps better to imagine a polluted sea in order to put pressure on those who would use the sea to externalize costs or exploit its benefits. That is, an environmental imaginary of the Baltic Sea as living or dying prepares the grounds for social and political conflicts around not just what the sea means to different groups but also its ontological status.

Notes

[1] Sterilized water is the abstract ideal of modern water; arguably, it is also perhaps the most dead. This water does not exist but is made. The water is filtered to remove organic compounds and then boiled to stop chemical reactions from taking place within it. Though the water still contains chemicals and other inorganics, meaning that it is not strictly pure, the chemicals and organics remain inert for the most part since their possibility for interaction has been interrupted (informal conversation @Baltic Sea Future 2018). In other words, the production of sterilized water doesn't fully get rid of contaminants, it just creates an environment where they no longer can interact. Inferring from this, death, in terms of both water and the things in it, is the destruction of an environment's capacity to allow those things within it to inter- or intra-act. When it comes to water, in other words, we often confuse sterility for purity. The pursuit for water to embody these characteristics is the pursuit for managing water. Both constitute a particular form of water death. As with animals and plants, we kill our water in order to drink it.

[2] This is why the undying (that is, the horror villain) and zombies induce fear in us. The undying because they ought to die and zombies because they ought to stay dead.

References

Andersen, J.H. and Laamanen, M. (eds) (2009) *Eutrophication in the Baltic Sea: An integrated assessment of the effects of nutrient enrichment in the Baltic Sea region*. Baltic Sea Environment Proceedings 115B. Baltic Marine Environment Protection Commission–Helsinki Commission.

Barad, K. (2003) Posthumanist performativity: Toward an understanding of how matter comes to matter. *Signs*, 28(3): 801–831.

Bird, E.A.R. (1987) The social construction of nature: Theoretical approaches to the history of environmental problems. *Environmental Review*, 11(4): 255–264.

Björck, S. (1995) A review of the history of the Baltic Sea, 13.0–8.0 Ka BP. *Quaternary International*, 27: 19–40.

'Blåstångenutrotningsotad.' *Arbetet*, 12 June 1982. SE/GLA/12751/O 1 N/1. Landsarkivet I Göteborg.

Danielson, J. (1981) Alger-mat och energi men också havets död. *Aftonbladet*, 1 August. SE/GLA/12751/O 1 N/1. Landsarkivet i Göteborg.

Forbes, E. (1859) *The natural history of the European seas*. Edited by R.A.C. Godwin-Austen. London: J. Van Voorst.

Grill, M. (2012) Åter liv i död havsbotten. *SVT Nyheter*, 12 July. https://www.svt.se/nyheter/lokalt/vast/vacker-liv-i-dod- havsbotten [accessed 12 September 2020].

Hinton, S. (2017) The Baltic: A dying sea on the doorstep of industrial giants. *Medium*, 22 February. https://medium. com/@stephenjhinton/the-baltic-a-dying-sea-on-the-doorstep-of- industrial-giants-273341841acf [accessed 12 September 2020].

Latour, B. (1983) Give me a laboratory and I will raise the world. In K. Knorr-Cetina and M. Mulkay (eds) *Science observed: Perspectives on the social study of science*. London: SAGE, pp 141–170.

Leclerc, G.-L. (1797) *Buffon's natural history, containing a theory of the earth, a general history of man, of the brute creation, and of vegetables, mineral, &c. &c.* Translated by James Smith Barr. Vol. 2. 10 vols. London: Printed for the proprietor, and sold by H. D. Symonds.

Lidström, S., Meyer, T. and Peterson, J.D. (2022) The metaphor of ocean 'health' is problematic: 'The ocean we want' is a better term. *Frontiers in Marine Science*, 9: 1–4.

Linton, J. (2010) *What is water? The history of a modern abstraction*. Vancouver: UBC Press.

Luokkanen, M., Huttunen, S. and Hildén, M. (2014) Geoengineering, news media and metaphors: Framing the controversial. *Public Understanding of Science*, 23(8): 966–981.

North, M. (2015) *The Baltic: A history*. Translated by K. Kronenberg. Cambridge, MA: Harvard University Press.

North, M. (2018) The Baltic Sea. In D. Armitage, A. Bashford and S. Sivasundaram (eds) *Oceanic histories*. Cambridge: Cambridge University Press, pp 209–233.

OCH (Ocean Health Index) *Ocean health index*. http://www.oceanhealthindex.org/home [accessed 12 September 2020].

Östersjöcentrum. 'Baltic Sea Science Center invigt,' (2019) 11 April. https://www.su.se/ostersjocentrum/samverkan/skansen/baltic-sea-science-center-invigt-1.434643 [accessed 12 September 2020].

Rose, D.B. and van Dooren, T. (eds) (2011) 'Unloved others: Death of the disregarded in the time of extinctions.' Special Issue. Vol. 50. *Australian Humanities Review*.

Rydén, L., Migula, P. and Andersson, M. (eds) (2003) *Environmental science: Understanding, protecting, and managing the environment in the Baltic Sea region*. Uppsala: Baltic University Press.

Segerstråle, S.G. (1969) Biological fluctuations in the Baltic Sea. *Progress in Oceanography*, 5: 169–184.

'Slemmiga grönalger undersökta trivs bara i bukten.' *Arbetet*. May 26, 1978. SE/GLA/12751/Ö 1 N/1. Landsarkivet i Göteborg.

Strang, V. (2004) *The meaning of water*. Oxford: Berg.

Strömberg, E. (1984) 'Slemmig alg dödar fjorden,' 9 July. SE/GLA/12751/ Ö 1 N/1. Landsarkivet i Göteborg.

Sveriges Radio (2014) Scientists ask just how sick is the Baltic Sea. *Sveriges Radio*, 14 May. https://sverigesradio.se/sida/artikel. aspx?programid= 2054&artikel=5862665 [accessed 12 September 2020].

Swedish Meteorological and Hydrological Institute (2010) *The Baltic Sea*. 10 August. https://www.smhi.se/en/theme/the-baltic- sea-1.12289. [accessed 12 September 2020.]

Thompson, M. (2017) *Rubbish theory: The creation and destruction of value*. London: Pluto Press.

Zillén, L., Conley, D., Bonsdorff, E. and Jakobsson, B.-M. (2008) Final report: Hypoxia in the Baltic Sea. 2020 (October).

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