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10 Negotiating Maritime Commons: Protection of the Baltic Sea in a European Context*

Abstract: The environmental history of the seas and oceans has generally remained a relatively unexplored theme. This chapter addresses the environmental history of the Baltic Sea, which is a European sea par excellence and the only sea that is entirely located within the continent. We will examine the links between wider historical currents in Europe and the marine environmental history of the Baltic Sea by focusing on three environmental regimes since the end of the nineteenth century until the 1990s. The first environmental regime was developed on the urban level and prevailed from the late nineteenth century until the Second World War. The second environmental regime was developed from the 1960s until the 1970s on the international level in the Baltic Sea region. The third environmental regime, covering the 1980s and 1990s, consisted of developing European cooperation. Still today these three different environmental regimes continue to co-operate in the region.

Keywords: marine environmental history; marine pollution; environmental diplomacy; urban-industrial wastewater; Baltic Sea region

1 Introduction

There is a shared understanding that marine environments are globally threatened by numerous anthropogenic factors. Nearly half of the world's population, approximately three billion people, currently live within 200 kilometres of a coastline. Coastal zones have higher population densities than any other ecologically defined zone in the world, and most of the world's largest cities are located along coasts. While coastal environments are important for human health and well-being, they are also sensitive to human impact as 90 per cent of the biomass of seas and oceans is concentrated along coastal zones. There are important reasons to study the relationship between seas and societies from a human perspective.

Seas and oceans form an integral part of Europe and surround the continent on three sides. To the north lies the Arctic Ocean, to the west the Atlantic Ocean, and to the south the Mediterranean Sea.

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There are only a few land-locked areas in all of Europe. Due to these maritime dimensions, Europe can be divided into four separate zones, consisting of the Euro-Arctic, the Euro-Atlantic, the Euro-Mediterranean, and the Euro-Baltic areas. Europe is therefore, both in a natural and cultural sense, a maritime continent, while its maritime history also makes Europe's past a feature of world history. European sea-borne exploration, imperialism, mercantilism, and later modernism have formulated societies and nature nearly all over the globe. Ever since European seafarers embarked on far-flung expeditions, the control of seas and oceans has been the key to global power, and the continent's maritime culture and history have been studied from many different angles. Yet, despite growing interest in recent times, the environmental history of the seas and oceans has generally remained a relatively unexplored theme, despite the fact that these waters cover roughly two-thirds of the Earth's surface.¹

This chapter will address the environmental history of the Baltic Sea, which is a European sea par excellence and the only sea that is entirely located within the continent. Therefore, all the littoral states (Estonia, Latvia, Lithuania, Poland, Germany, Denmark, Sweden, Finland, and Russia) surrounding the Baltic Sea are European countries, and apart from Russia, they are also all presently member states of the European Union. In geographical terms, the Baltic Sea has an exceptionally large catchment area (1,700,000 square kilometres), which is about four times larger than the surface area of the sea (420,000 square kilometres). Consequently, the five largest lakes in Europe (Ladoga, Onega, Vänern, Saimaa, and Peipus) are located in its basin. In fact, most of Europe's lakes are found in the Baltic Sea catchment area. Today, almost 90 million people in 14 European countries live in the Baltic Sea catchment area, an expanse that is more than three times larger than that of France or Spain. Therefore, our focus will be not only on the sea area but also on the catchment area of the sea. Because of its exceptional location on the continental shelf, the average depth of the Baltic Sea is only 55 metres, whereas the average depth of, for example, the Mediterranean Sea is 1,500 metres. Because the total volume of water in the Baltic Sea is also small, the hydrographical characteristics of the sea are greatly affected by its catchment area. Half of the water in the Baltic Sea is rainwater that has fallen directly or flown indirectly into the sea through the rivers in the catchment area. Due to the notable impact of the catchment area and the poor connection of the Baltic Sea with the Atlantic Ocean through the extremely shallow Danish straits, which are only ten metres deep at their lowest point, water in the Baltic Sea is neither salty nor sweet but brackish, that is to say, it is a mixture of sweet rainwater and salty seawater. Brackish water is particularly poor in oxygen and the variety of species it can sustain. The Baltic Sea is also vulnerable to pollution because it is the only sea area in the world that may, in principle, freeze over during cold winters. In brief, it is a semi-closed and

shallow sea with poor water exchange, yet it receives pollutants from a particularly wide catchment area. Consequently, the coastal states of the Baltic Sea cannot blame anyone but themselves for the sea's past and present environmental problems.

Among the world seas and oceans, the Baltic Sea is an alarming yet nonetheless interesting case. Natural scientists have called the Baltic Sea a time machine through which the progressive decline of the marine ecosystems currently happening all over the world can be evaluated.² Similarly, historians can analyse the multiple ways in which human activities have affected the marine environment and how this change has influenced human ideas about its protection and related policies. The Baltic Sea is an international environment, which can only be effectively protected through cooperation among littoral states and other transnational actors. Therefore, the Baltic Sea is a lens through which cooperation and interaction among human and non-human actors and European nations vis-à-vis the marine environment can be analysed. The transnational history of the marine environment may provide fresh perspectives on the construction of the European community, policies, and identity. Taking these above-mentioned perspectives as our point of departure, in this chapter we will investigate how the environmental changes in the Baltic Sea have been perceived and what kind of responses to these developments have been instigated by individuals and institutions. We will examine the links between wider historical currents in Europe and the marine environmental history of the Baltic Sea by focusing on three time periods in the relationship between humans and the sea since the end of the nineteenth century until the 1990s. These time periods can also be conceptualized as separate environmental regimes with distinctive sets of ideas and policy options. These environmental regimes were necessarily influenced by larger intellectual and political developments in Europe, but we also argue that the reverse occasionally took place and the environmental regimes of the Baltic Sea thus, at times, affected European environmental policy.

We maintain that the roots of the contemporary environmental regime in the Baltic Sea region cannot be found in the high seas. Rather we need to turn and focus our gaze at the industrializing coastal towns and cities in the Baltic Sea catchment area and take the role of their human populations into account. It was here in the Baltic Sea that marine pollution emerged for the first time as a severe problem, when the sea started to be exploited as a dumping ground for various forms of waste. The first environmental regime we explore prevailed from the late nineteenth century until the Second World War. The urban environmental regime was characterized by vibrant discussion among various stakeholders and by the exchange of innovative political, scientific, and technical ideas across the

urban-industrial Western world, despite the turbulence at the end of the nineteenth and beginning of the twentieth centuries, the First World War, and the Great Depression.

The second regime to be studied developed from the 1960s until the 1970s in the context of the Cold War, a time when new chemicals endangered the entire sea area. The international environmental regime became a battleground for Cold Warriors on both sides, but amid all the hostilities, there were also efforts to build cooperation. We maintain that almost nowhere else in Europe were the contacts across the Iron Curtain as constructive as in the Baltic Sea region, where scientific cooperation paved the way to make political treaties and establish environmental institutions for protecting the sea from pollution.

The third regime, covering the 1980s and 1990s, saw the end of the Cold War and localized reconstruction following the fall of the Soviet Union and communism in the eastern part of Central Europe. The strained political situation in the 1980s dictated a slow and difficult process of finding a common concern and response to the marine pollution problems, a challenge that lasted until the 1990s, when a renewed interest in cooperation came about. Financial assistance from the West to the East also helped the new democracies to pursue Western environmental standards. At the same time, international cooperation aimed at alleviating the difficult transition from communism towards market-based liberal democracy. The eventual expansion of the European Union was further signified by the emergence of a European environmental regime in the Baltic Sea region – with specific Baltic traits.

We will focus on the beginnings of each of these three environmental regimes. Due to the scope of our theme, this chapter is based mostly on existing research literature and our own studies.

2 Beginnings of Water Protection in Northern Europe

In the following, we will address the successes and failures of the beginnings of water protection in the Baltic Sea region by exploring the activities for water regimes of four cities that were/are currently located on different sides of the Baltic Sea. We will examine Danzig (present-day Gdańsk) on the southern coast, as well as St Petersburg on the eastern, Helsinki on the northern, and Stockholm on the western coasts. The presentation of these cities explores different themes that became crucial for the development of modern water protection policy and practices in the Baltic Sea region and also in

the rest of Europe at the turn of the nineteenth and twentieth century.³ However, due to the lack of comparative historical studies of municipal environmental policy of coastal and inland cities, the implications of the following case studies should not yet be generalized.

Danzig: Pioneering Technical Solutions

A Polish ruler founded Gdańsk in the 980s at the mouth of the Vistula River on the Baltic Sea coast. The area was later taken over by the Kingdom of Prussia in the second partition of Poland in 1793. Danzig, the German version of the city's original name, became an important military harbour in the Kingdom of Prussia, which was later annexed to the German Empire in 1871. At that time, four of the largest towns in Germany, namely Berlin, Breslau, Danzig, and Königsberg, were located in Prussia, the most urbanized area in Northern Europe. Due to the urban problems of the time, the Ministry of Trade, seeking blueprints for solving the problems of other European countries, sent three sanitary experts to English and French cities in 1860 to explore new inventions for sanitary reforms. After returning to Prussia, these experts began planning an exceptionally holistic pilot system for a centralized water supply and sewer system, including wastewater treatment in the city of Danzig, which at that time had nearly 100,000 inhabitants.⁴ Such reforms were considered necessary because Danzig's canals and ditches were filled with excrement, and the city's mortality rate exceeded the birth rate of its urban population, primarily due to water-borne epidemics such as cholera. In addition, the need to modernize the infrastructure of its harbour, combined with improvements that the Prussian navy had requested, impelled these reforms forward.⁵

In January 1863, Danzig elected a new dynamic mayor, Leopold von Winter. The design of the new water supply and sewerage system was initiated the same year with surveys of the existing geological, hydrological, and structural conditions. Also, detailed technical plans and estimates for construction costs were presented.⁶ After long public discussions, the City Council accepted the master plan in 1869. First, the sewerage system was constructed and the streets were paved. The main sewer collectors ended in the city's harbour, where siphons were installed under the river beds to lead the wastewater gravitationally to a new pumping station on a nearby small island, from which the wastewater was finally pumped through a three-kilometre-long pressure pipe to the wastewater treatment plant built in 1871/72 on the coastal sand dunes near the contemporary Gdańsk Bay.⁷

The first wastewater treatment plant of Danzig consisted of settling tanks and filter and irrigation fields. Sand dunes were flattened and ditches were constructed on two levels. Ditches on the upper

level received wastewater, while those at the lower level drained the treated wastewater. Wastewater was filtered when it trickled from the upper level through the sandy layer covered by grass to the lower level.⁸ After treatment, the wastewater was discharged into the Vistula River close to the Baltic Sea. The hygienic quality of wastewater and river water in the Vistula River was also investigated on a regular basis, and the treatment results of this method, called intermittent filtration, were largely satisfactory. Originally, the plant consisted of about 170 hectares of modified dunes, but in 1908, the fields were extended up to 320 hectares. The first wastewater treatment plant in the Baltic Sea region functioned efficiently until the plant was overloaded by increasing wastewater volume at the turn of the century. As a response, the city built another irrigation field in the nearby town of Sopot and a biofilter plant for another nearby town, Oliwa. Finally, a second wastewater treatment plant, consisting of settling tanks and a modern biological activated sludge system, was erected for the city of Danzig in 1932.⁹

In order to solve its difficult pollution problems, the city of Danzig resorted to resolute measures. The sanitary system, finished in 1872, was probably the first comprehensive water supply and sewerage system built in Northern Europe. This truly holistic network consisted of a groundwater intake, a distribution network, a piped water connection to all of the nearly 4,000 households in the city, a separate sewer system for storm water and wastewater, main collectors, a central pumping station, a wastewater treatment plant, and monitors for the discharge of treated wastewater into the river.¹⁰ This project was carefully prepared through international cooperation with experts from different cities, technical universities, and private companies. The final decision was based on the open dissemination of plans and critical public discussion in Danzig. Inspired by ideas from abroad, the modernized concept started to spread. It is hardly surprising that the treatment technology for water protection that Danzig chose was later adopted in Prussia by the cities of Bremen, Breslau, Berlin, and Königsberg.¹¹ Yet, while some European cities were progressive in sanitary reforms and water protection policy, others were not.

St Petersburg: A Window to the West?

At the mouth of the Neva River near the Gulf of Finland, Tsar Peter I (Peter “the Great”) established a port and military base in 1703, which then became Russia’s new capital in 1712. St Petersburg soon became the largest city in the entire Baltic Sea region. No costs were spared for the construction of canals, administration buildings, fortresses, churches, and palaces, and the centre of St Petersburg became an impressive sight: with its gilded domes, imperial Russia’s window to the West shone from

faraway. On closer inspection, however, this window showed cracks. The metropolis on the Neva actually cut costs in the construction of some basic infrastructure, thereby affecting the well-being of its inhabitants.

While most cities in late nineteenth-century Western Europe began to invest significant sums in water mains, sewers, and health care, St Petersburg, then the fourth largest metropolis in Europe, did not realize similar reforms. St Petersburg's water supply system was inadequate, and the necessary public sewers had not been built in the city at all. Thus it became the only European capital without a proper municipal sewer system.¹² Finally, in 1865 – the same year that the plan for the water and sewerage system for Danzig was completed – the city of St Petersburg reacted to its growing hygienic problems by establishing a commission that announced an international competition for drafting a general plan to construct a proper municipal sewerage system. As the commission considered all received projects unsatisfactory, new competitions were launched, and the commission invited proposals from sanitary planners, including Europe's most qualified and experienced engineers at the time. By 1917, altogether 65 sewerage system designs had been considered by various commissions established by the city. In the end, however, none of the plans were accepted.¹³ As a consequence, the waterways within and outside the city, including the Neva Bay and coastal areas, became increasingly polluted. Due to the systematic neglect of basic sanitary reforms, cholera epidemics continued in St Petersburg until the First World War, that is to say longer than in any other major European city.¹⁴ Both Russian and foreign newspapers sarcastically emphasized that the main cause of Russia's ongoing cholera epidemics was not a disease, *cholera vibrio*, but rather the weak imperial society, *cholera russica*, and particularly its socially sick capital, *cholera Petropolitana*.¹⁵ At the beginning of the twentieth century, St Petersburg was widely known as the most unhealthy metropolis in Europe.¹⁶ The case of imperial St Petersburg proves how both sanitary reforms and water protection policy were linked to the sociopolitical power structures of European towns and cities.

Helsinki: Active Civil Society

Gustav I, the king of Sweden, founded Helsinki at the mouth of a river on the northern shore of the Gulf of Finland in 1550. In 1640, the new town was transferred to a nearby windy cape by the sea. On both sides of the cape, there were large bays, and at the very centre of the city, there were small and shallow inner bays. After installing a water carriage system at the beginning of the twentieth century, the inner bays in Helsinki received a notable part of the wastewater from the city and neighbouring major industrial plants, including a sugar factory and gasworks.¹⁷ As a result, the central

park ceased to attract people for Sunday walks because of the stench coming from the bays. At the beginning of the twentieth century, the area's washing and swimming houses as well as piers had to be closed due to pollution. As the population grew in Helsinki, the pollution of the bays led to heated debates. Something had to be done, but what?

Many proposals were presented for alleviating the pollution and plankton blooms of the inner bays.¹⁸ The first "natural" proposal was to simply landfill the most polluted inner bay. The second was to promote water exchange by digging a channel across the western parts of the city and thereby allowing clean seawater to flush the bays. The third was to dredge the bay, transport polluted sediments away, and increase the water volume of the bay. The fourth suggested building large collector sewers and pumping wastewater out to the sea instead of into the bay, while the fifth proposed collecting the sewage water and purifying it. The City Council selected the last and cheapest proposal, and in 1910, the first wastewater treatment plant, a biological trickling filter, was built in Helsinki.¹⁹

Despite its innovative technology, the first biological wastewater treatment was far too small to handle the increasing wastewater load. Consequently, several organizations complained that the city's measures were far from sufficient. In 1911, complaints by swimmers' associations and three women's organizations were directed to the City Council because of the nuisance caused by pollution. Swimming became fashionable in towns and cities at the end of the nineteenth century, first among the bourgeoisie and then gradually among the working class. Meanwhile, water pollution emerged as a new danger to the newly erected bathing houses. The sea, which had been regarded as a source of health, became a "source of plague", and the Board of Health had to close several of the bathing houses. In 1911, because of the pollution of shore waters, the swimmers' associations in Helsinki demanded the construction of wastewater treatment plants and a swimming hall.

In addition to swimmers, three different women's organizations campaigned effectively against water pollution in 1911/12. The main reason for this campaign was that the pollution threatened to end the practice of rinsing clothes in the sea. At the time, all the laundry was rinsed in the sea because piped water was considered to be too expensive to use for that purpose. Three different complaints were made by women's organizations representing working-class, middle-class, and upper-class women. United action was impossible due to the deep sociopolitical divisions between these organizations. Nevertheless, the campaign against pollution was protracted and intensified due to the mutual competition between these organizations.²⁰

The city of Helsinki did not immediately fulfil the wishes of the swimmers or the women, either. Instead, these complaints were used in the coming years to legitimize a long planning process for the new sewerage system. Scientific studies combined with public involvement and political debate helped the city to publish the first white paper in 1915 dedicated to solving urban water pollution problems. In 1927, the city published a master plan to treat 100 per cent of the municipal wastewater in one mechanical and six large activated sludge wastewater treatment plants. The master plan included the building of pumping stations and major collector sewers on both sides of the city. The two first large activated sludge plants were completed in the early 1930s. The construction of the third plant was interrupted on 30 November 1939 when Russian bombers appeared in the skies of Helsinki and the Winter War commenced.²¹ The Second World War began in Northern Europe with the Soviet Union's attack on Finland, which interrupted all water protection efforts for the coming decade.

Local Newspapers versus the City of Stockholm

The Swedish capital city of Stockholm is built on 14 islands. The city is characterized by a number of bays, rivers, and bridges. The third largest lake in Sweden, Lake Mälaren, is situated in its western hinterland, and to the east lies the Baltic Sea, with which it is connected to via a long fjord. In the 1920s, all municipal and industrial wastewater was still discharged untreated into the nearby watercourses, which consisted of relatively shallow bays. Over several decades, the load had gradually increased, and the situation in the city centre was exacerbated by natural conditions.

In autumn 1928, Stockholm's largest daily newspapers, the conservative *Svenska Dagbladet* and liberal *Dagens Nyheter*, wrote several reports on the water quality at the bathing places in the city's centre. All the city's residents could see the amounts of floating rubbish and dirt in the main waterbodies of Stockholm. Therefore, the Board of Health of the city of Stockholm studied the water quality in these areas and concluded that the risk of typhoid and paratyphoid fever was considerable. According to the newspapers, plans to shut down these popular facilities in the middle of the summer were justified. The papers deliberately interviewed all the party leaders in the City Council and forced them to publicly state their opinions. The papers also pointed out that Stockholm was not the only city in the world with polluted shores: for example, Hamburg, Danzig, and New York were reported to be facing similar pollution problems, and according to these newspapers, it was time to act immediately.²²

Following the publicity given to these pollution questions, the Street Department in the Department of Public Works of Stockholm drafted a proposal for a new sewerage system with a mechanical treatment plant together with a general plan, which was ready in 1930. It proposed the construction of large collectors, a pumping station, and mechanical wastewater treatment plants for the central and southern areas of the city. The general plan to reform the sewerage system over the next 20 years was accepted in December 1933 by the City Council. All the political parties, including conservatives and social democrats, regarded the general plan as a necessary step.²³

Stockholm's first wastewater treatment plant was completed in 1934, and it provided the mechanical treatment of wastewater for thousands of residents of the city. By focusing on mechanical treatment, the city of Stockholm clearly opted for a financially cheaper water protection policy, whereas cities like Danzig and Helsinki were already building more advanced and, therefore, more expensive biological wastewater treatment plants that used the activated sludge method. When the Second World War broke out, Sweden remained neutral, and Stockholm was one of the rare cities in Europe that was able to continue building water protection infrastructure during the war. However, for the rest of Europe, the Second World War signified a prolonged pause in the development of water protection.²⁴

Toward an Urban Environmental Regime

The four case studies strongly suggest the importance of towns and cities in launching efforts to initiate water protection. These cities did so because water pollution increased in the very centres of coastal towns and cities and threatened the health and well-being of a large number of people in rapidly urbanizing Europe. This situation created, for the first time, a large and relatively well-educated and informed population that was very aware of the risks of coastal pollution. Consequently, a new regime of pollution emerged in urban Europe. A crucial element in the development of the new urban environmental regime was the establishment of local popular movements, progressive city councils, city governments, and professional boards such as boards of health and departments of public works, which became the key organizations in the new urban environmental regime.

Early urban water protection activities were based on the new sanitary ideology, developed by urban experts of the time. This ideology aimed to keep urban soil, water, and air clean by means of large-scale structural reforms that were based on social, scientific, and technical investigations and realized

through political decisions. Granting municipal autonomy, together with taxing rights, provided the needed economic resources for urban water protection. The importance of the urban environmental regime only increased after the end of the nineteenth century as urban areas expanded in Europe, creating strong local, national, and international networks of urban environmental policy, media, science, and technology.

3 Building the Baltic Sea Region over the Iron Curtain

A common notion among maritime historians is that the sea not only separates but also unites human societies. Rarely has this notion been so true as in the case of the Baltic Sea region during the Cold War. In the late 1940s, from Stettin on the Baltic Sea to Trieste on the Adriatic Sea, an Iron Curtain descended across the continent, as Winston Churchill famously put it; Europe became divided into two hostile realms. Churchill may have turned a blind eye to the edges of Europe, but his statement can also be read to indicate that the European seas, the Baltic Sea in the European north and the Adriatic Sea in the European south, were natural barriers that self-evidently were extensions of the new continental division. There was no need to lower imaginary curtains; the sea was a natural curtain in itself that insuperably divided the blocs.

From the late 1940s until the mid-1960s, the interaction between the two hostile blocs and across the Baltic Sea was very limited as the previously free movement of people, shipping connections, and exchange of information were effectively cut off. However, there were exceptions to the rule, of which, in the context of the Baltic Sea, by far the most important was the relationship between Finland and the Union of Soviet Socialist Republics (USSR). Finland was placed in a schizophrenic position of being a Nordic democratic and capitalist society, which shared a 1,000-kilometre-long border with the new socialist military superpower (see figure 1). On the one hand, lucrative foreign trade with the Soviet Union brought significant benefits to the Finnish state, business, and society; on the other hand, freedom of speech concerning international relations, in particular, was limited. Officially, Finland announced neutrality; in practice, though, it often bowed to Soviet interests. This position, however, gave Finland a definitive edge over other European states in fostering contacts across the Iron Curtain (see also chapter 6 by Eckert/Šimková). Largely, it was the Baltic marine environment that functioned as the formal basis for these contacts from the mid-1960s onwards.

Figure 1: The Cold War divided Europe and the Baltic Sea region in the post-war period. Three coastal socialist states were members of the Warsaw Pact, the Federal Republic of Germany and Denmark belonged to NATO, and Finland and Sweden were considered as politically neutral. Because of Soviet pressure the territorial waters, on the average twelve nautical miles from respective coastline, were not included in the Helsinki Convention signed in 1974. Map: Räsänen and Laakkonen, 2006.

In the 1920s, a visionary Russian naturalist, Vladimir Vernadsky, declared that “change always takes place on the Earth’s surface and not in the ocean”.²⁵ Among oceanographers, this was a commonly held view even well into the latter half of the twentieth century. For Vernadsky and his contemporaries, the land was dynamic, while the sea was eternally the same. From this view, it followed that, besides the narrow strips of coastal waters, human societies could not significantly alter the chemistry of the sea. However, the Baltic Sea is not an ocean; it is hardly even a proper sea but rather a semi-closed pool of brackish water containing a relatively small quantity of water. After the emergence of highly developed societies in its catchment area, the Baltic Sea has received huge amounts of industrial and municipal discharge of pollutants, run-off from cultivated land areas, and discharge from ships.

Gradually, all these factors began to take their toll on marine chemistry and biology. Oil pollution had been known since the early twentieth century, but the drastic increase of oil shipments since the 1950s evidently meant increasing oil pollution. On Swedish coasts alone, for example, three large-scale oil accidents occurred within a short period of time around the mid-1960s, while hundreds of oil spills, often intentionally released from ships, were detected annually.²⁶ In addition to oil pollution, there were also other environmental changes in the marine environment. In the late 1960s, Swedish scientists found that the Baltic Sea contained five to ten times more DDT and PCB compounds than any other studied sea area in the world. The first victims of toxic chemicals were seals and predatory birds, which were rapidly heading towards extinction. The next victims, it was feared, could be humans.²⁷ Finally, the first symptoms of the excessive growth of biomass – caused by the run-off of nutrients from factories, domestic wastewater, and farm fields (commonly referred to as eutrophication) – were observed by the end of the 1960s.²⁸

The Baltic Sea, of course, was not an exception among European seas because similar environmental changes had occurred in all regional seas. The infamous Torrey Canyon accident, which devastated the coasts of Cornwall and the Bretagne in the spring of 1967 and killed hundreds of thousands of sea

birds, was at that time the worst ever tanker accident, galvanizing politicians and commentators all over the world who demanded stricter rules for oil transportation. It also brought the North Sea countries together to agree on a governmental treaty in 1969 for protecting the sea from oil.²⁹

The heavily trafficked Mediterranean Sea was not saved from massive oil disasters either. Over the course of only a few years from the late 1960s to early 1970s, three large oil tanker accidents took place in the Mediterranean Sea, all of which spilled more oil into the sea than had been spilled in any tanker accidents in the Baltic Sea. As elsewhere, smaller oil spills from normal tanker and refinery operations were ubiquitous.³⁰ When adding the impact of sewage water and pollution by harmful substances, by the early 1970s the state of the Mediterranean Sea was, in the words of one contemporary observer, a “sick sea”:

Health of millions will be in danger. Recreational beaches will be tarred and ordured [sic]. The sea will be out of bounds for bathers. The trees will go on dying along the coasts, suffocated or poisoned by the polluted sea-winds. The quality of life will be diminished.³¹

Yet, it was the changes in the Baltic Sea, with its small water mass and poor water exchange, that caused more concern and led to more research activities than any other sea area in Europe. Already in the early 1970s, in domestic contexts as well as in influential arenas such as the United Nations, the Baltic Sea was referred to as the most polluted sea in the world – and as a warning sign for some far-seeing minds who saw in the Baltic Sea the likely future of other world seas.³²

The concern for environmental changes translated rather quickly into cooperative initiatives among the Baltic Sea states to study the marine environment and prevent further pollution. For some, particularly for marine scientists and sanitary engineers, environmental diplomacy was a last-minute effort to save the dying sea. For others, primarily politicians, besides improving the well-being of ecosystems, environmental cooperation proved to also be a promising way to enhance contacts between democratic and communist countries and thus secure peace in Europe.

These two motives were clearly apparent, when Finland and the Soviet Union agreed to cooperate on the environmental research on the Gulf of Finland. The Agreement on the Scientific Cooperation of the Gulf of Finland was signed in 1968 under the umbrella of a larger Treaty on the Scientific and Technical cooperation that had already been signed in 1955 to solidify friendly relations between these two Second World War enemies. With this cooperation, Finland aimed at minimizing the threat

and interference of its mighty neighbour in its domestic affairs – peaceful coexistence was the liturgy of the day – while the USSR also sought to gain access to Western technology, such as wastewater purification methods. What ensued was a dynamic collaboration, sometimes including close friendships between Finnish marine scientists and their Estonian counterparts, who were mostly responsible for practical work on the Soviet side. This cooperation ensured that scientists behind the Iron Curtain became aware of the newest currents in Western environmental sciences. Estonian scientists, for example, spent significant time in libraries copying scientific journals whenever visiting Finland. The Finns, for their part, received information, though often vague, regarding the discharge of various pollutants from the USSR.³³

From the very beginning, the cooperation aimed at expanding to include a comprehensive environmental treaty covering all seven Baltic Sea states. The years around 1970 were known in the history of the Cold War as the period of *détente*. Negotiations between superpowers for halting the arms race increased hopes for a lasting peace, while Northern Europe saw new opportunities for contacts across the Iron Curtain after the Federal Republic of Germany, led by Chancellor Willy Brandt, adopted the “new Ostpolitik”. Under these promising new conditions, Finland and Sweden, the two neutral states in Northern Europe, pursued the role of mediators, and the marine environment was a perfect arena to begin with as it enabled actors to come together without having to breach rather delicate issues, such as human rights or state borders.

Mainly due to domestic pressure, the Swedish government attempted to broker an agreement on protecting the Baltic Sea from oil pollution in two meetings held in Visby in 1969 and 1970 respectively. Both meetings ended in failure because West Germany – according to its Hallstein Doctrine, whereby there was only one legitimate Germany – would not enter into any agreement with East Germany as an equal party. The communist states, on the other hand, made the presence of East Germany their precondition for any treaty. Finland tried to overcome this dilemma by inviting Sweden to join the Finno-Russian agreement. It was hoped that the rest of the littoral states would support and enter into the new marine environmental regime when the political situation was ripe. Despite such goals, the negotiations for a trilateral agreement never materialized. The USSR remained adamant in its demand that any multilateral agreement must be signed by every Baltic Sea state, including East Germany.³⁴ Once again, Cold War politics hindered cooperative policies for saving a deteriorating marine environment.

Although the early years of Baltic marine diplomacy can be interpreted as a series of failures, there was ample progress going on in both diplomatic and scientific arenas that provided a catalyst for Baltic-wide cooperation as soon as the status of the German Democratic Republic was resolved. The pollution of European regional seas was adopted as one of the key themes in the first United Nations global environmental conference (the Conference on the Human Environment), held in Stockholm in 1972. The Stockholm conference also gave birth to the United Nations Environment Programme, one of whose early priorities was the protection of regional seas (the Regional Seas Programme), with a particular focus on the Mediterranean Sea.³⁵ Meanwhile, marine scientists were able to learn a great deal about scientific endeavours taking place in other countries via bilateral contacts as well as through meetings of international scientific organizations in which scientists from every Baltic Sea state took part. The most important among these organizations was the International Council for the Exploration of the Seas, which in 1968 launched an extensive survey on the research, sources, and volumes of land-based pollution from each of the Baltic Sea countries.³⁶ Similar surveys had been conducted in 1967/68 for the North Sea countries,³⁷ and there is no reason to doubt that information regarding the North Sea ecosystem also circulated in Eastern Europe. Moreover, marine scientists from both blocs met in other meetings of biological scientific organizations, such as the Scientific Committee on Oceanic Research and the International Biological Program.

When the two Germanys finally signed their Basic Treaty (Grundlagenvertrag) in 1972, which acknowledged the sovereignty of the German Democratic Republic, the existing ties between marine scientists across the Iron Curtain accelerated the drafting and later the implementation of the Helsinki Convention.³⁸ The negotiations for an environmental treaty were launched in the spring of 1973, and only one year later, on 22 March 1974, all seven Baltic Sea states signed the Convention on the Protection of the Marine Environment of the Baltic Sea Area (also known as the Helsinki Convention), which initiated a new phase in marine environmental agreements (see figure 2). While the previous agreements had been formed on a single-issue basis – for example, covering oil or, in more extensive agreements, the dumping of hazardous waste from ships – the Helsinki Convention aimed at protecting the sea from all known marine pollutants; that is to say, it compiled numerous earlier agreements under one protocol and one secretariat.³⁹

This all-inclusive principle was thereafter established as a strategic bedrock for other similar marine agreements. For example, the Barcelona Convention (Convention for the Protection of the Mediterranean Sea Against Pollution), signed in 1976 for protecting the Mediterranean Sea, was not only significantly influenced by the Helsinki Convention but also indebted to various more narrowly

defined European agreements, such as the London Convention and Oslo Convention on dumping (Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, and Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, 1972), the Paris Convention on land-based pollution (Convention for the Prevention of Marine Pollution from Land-based Sources, 1974), and the work conducted under the Regional Seas Programme, within the United Nations Environment Programme. Indeed, as an all-inclusive general treaty, the Barcelona Convention went even further than the Helsinki Convention, as its protocol also included internal waters as well as pollutants transmitted by rivers. These areas were missing from the Helsinki Convention due to Soviet demands, which caused a serious setback in the quest for the more efficient protection of the Baltic Sea. Obviously, the Mediterranean environmental regime did not have to deal with the obstacle of having that particular superpower as one of its signatories.⁴⁰ In this sense, the birth of a more general marine environmental diplomacy was genuinely an all-European project that, despite the lack of a single integrative authority, unified the marine policies in different parts of the continent and defined their relationship with the underwater world.

Moreover, the Helsinki Convention was the first multilateral European treaty between members from both military blocs, the North Atlantic Treaty Organization and the Warsaw Pact, and involving neutral states. As such, it also paved the way for the Conference on Security and Cooperation in Europe, held in Helsinki in 1975 (see figure 2). In the world of the two different realities that the Cold War had created, marine environmental cooperation helped to rebuild bridges among Europeans that, for more than 20 years, had been insurmountable.

Figure 2: US President Gerald Ford and USSR General Secretary Leonid Brezhnev met in a good atmosphere during the Conference on Security and Cooperation in Europe held in Helsinki in 1975. Photo: The Archive of President Urho Kekkonen.

4 Towards a European Environmental Regime

By the 1990s, the use of the majority of notorious toxic chemicals had been prohibited or strictly controlled. Although the USSR secretly continued to use, for example, DDT,⁴¹ the state of the European marine environment gradually improved. The risk of oil tanker accidents was ever present, as the disasters of the tankers *Erika* off the coast of France in 1999 and of the *Prestige* in Spain in 2002 both illustrate. Significantly, the single-hulled *Prestige* had just visited the rocky Baltic Sea

before wrecking off the coast of Galicia and spilling approximately 64,000 tons of oil into the Atlantic Ocean. However, due to technological improvements, as well as resolutions for banning intentional oil discharge (by far the biggest source of chronic oil contamination in the previous decades), oil pollution in the Baltic Sea and other seas has substantially decreased since the 1970s. Parts of the Baltic Sea, the Mediterranean Sea, and the Black Sea, for example, were designated as special areas with stricter rules for oil discharge in the International Convention for the Prevention of Marine Pollution from Ships (1973), signed under the auspices of the International Maritime Consultative Organization.⁴²

This does not mean that the European seas were turning into unspoiled environments. The main concern, however, switched from toxic chemicals and oil pollution toward eutrophication. In both much-studied European inland seas, the Mediterranean Sea and the Baltic Sea, the nutrient concentrations in the seawater increased rapidly from the 1960s to the 1980s. In the Mediterranean Sea, blue-green algae blooms occurred much more frequently than in the previous decades, and in the Baltic Sea, beaches were tarnished almost every summer by slimy masses of blue-green algae, some of which were toxic. Moreover, when the algal biomass decayed it, consumed oxygen in the seawater, which made the large parts of the deep basins totally anoxic and thus devoid of any life.⁴³ Nutrients, of course, flow into the sea from the whole drainage area, but their volume depends on the forms of production and abatement measures. Nutrient pollution in the Baltic Sea is a case in point for analysing how differently the states have dealt with transboundary environmental problems. The democratic littoral countries, West Germany, Denmark, Finland, and Sweden, since the 1970s had rushed to build wastewater purification plants in all municipalities and at all factories. Although huge amounts of nutrients still flowed from cultivated fields and forests into the watercourses, the use of artificial fertilizers per produced units nevertheless decreased substantially.⁴⁴ As a result of measures taken in democratic states, the total nutrient load from the catchment basin, which had peaked in mid-1980s, gradually began to decrease.⁴⁵

There was also the increasing will in communist states to build environmentally sounder societies, although the system continued to reward industrial-polluting practices. In many municipalities, for example, wastewater treatment developed surprisingly rapidly.⁴⁶ The most significant problems were evident in large cities such as Leningrad (present-day St. Petersburg), where most of the industrial and municipal wastewater continued to be discharged into nearby watercourses without any purification.⁴⁷ As for international cooperation, the genuine understanding of common marine environmental problems in communist states lagged far behind that of the West. As long as the Cold

War lasted, the work of the Helsinki Commission (Helcom. Baltic Marine Environment Protection Commission), an intergovernmental body created in the Helsinki Convention to coordinate international actions, was seriously compromised owing to the lack of enthusiasm on the part of the USSR and its allies. The Soviet goal of contacting the West and exploiting its technologies had already been achieved in 1974 with the signing of the Helsinki Convention, and afterwards their interest in the work of Helcom declined. Even the good intentions that emerged during the period of perestroika in the late 1980s were buried under administrative disarray and economic turmoil.⁴⁸ Thus, when the Berlin Wall came down in 1989 and the Soviet Union collapsed two years later, the Baltic Sea area was still a deeply divided entity in terms of environmental protection.

The collapse of communism did, however, breathe new life into Baltic environmental cooperation. Already in 1992, rather soon after the Soviet Union disintegrated into the Russian Federation, the Baltic Sea states re-signed the Helsinki Convention, which introduced the newly independent Baltic states as contracting parties. Perhaps the clearest sign of a new era was the extension of the scope of the Helsinki Convention. In 1974, the Soviet Union had required its territorial waters to be excluded from the convention so that other parties could not interfere in its internal affairs. The re-signed convention also covered these territorial waters – which, in a relatively small regional sea, such as the Baltic Sea – was a precondition for the effective implementation of this international treaty.⁴⁹

The fresh start in the 1990s allowed both politicians and scientists to direct their energies towards mitigating the marine environmental crisis, instead of mainly polishing friendly relations. By the early 1990s and especially after the horrendous environmental catastrophes in the former Soviet Union came to light,⁵⁰ it was increasingly clear that the most cost-efficient way to improve the state of Baltic ecosystems was to focus on discharge in former communist states. In practice, this meant a massive transfer of funds, technology, and know-how, through which Western environmental standards and principles could be transplanted into the post-Soviet emerging market economies. Not only were the financiers, Western democracies, and their multinational organizations – such as the International Monetary Fund, the World Bank, and increasingly the European Union – keen to support projects that addressed those problems, which were strongly in their national interests, but there was also a hidden motive to find new markets for their companies, which motivated such activities. The funding recipients, for their part, were more than happy to benefit from the funding countries' growing concern over the marine environment.⁵¹ For example, wastewater treatment systems in St Petersburg and Kaliningrad were finally completed in the 2010s with the help of expertise and financial support from Finland, Sweden, and the European Union.

A cynical reading aside, the collaboration in environmental protection could also be seen as a win-win scheme, which introduced Western environmental principles and policy norms into the former communist states. Although some commentators saw it as waste of money, at its best, the export of environmental policies could also ease tensions in and between the states and thus improve environmental security in Northern Europe.⁵² As such, environmental cooperation can be discussed as an integrating force in Northern Europe when the former communist states struggled with the transition towards creating democratic societies and, later, towards gaining European Union membership. It is no wonder that the European Union – by providing funding for multiple programmes and coordinating the implementation of the United Nations Agenda 21 (Baltic 21 programme), as well as through its regulative and directive tools such as distinctive marine strategies – emerged as an increasingly important actor in marine protection in the Baltic Sea area.⁵³

5 Conclusions

Our starting point was to attempt to understand how water pollution and protection have emerged in the Baltic Sea region, how the conceptualizations of marine environmental problems have widened over time, and what kinds of responses have developed in different societies. While most studies have focused on some specific regions, our target was to view, if possible, the Baltic Sea as a whole and, further, as a European region.

The first environmental regime developed on the urban level. Modern water protection was initiated by sanitary ideology in pioneering towns and cities in the late nineteenth century and was based on the fundamental urban administrative, political, and economic reforms that modernized European towns and cities. Crucial elements of the modern awareness of water pollution including science, technology, media, and environmental policy-making were created in progressive towns and cities. Our case studies on Danzig (Gdańsk), St Petersburg, Helsinki, and Stockholm demonstrate how different the socioenvironmental situations in examined cities were. Therefore, the responses varied greatly between these cities.

Generally speaking, urban industrial water protection gradually expanded in societies, becoming finally the first, the largest, and probably also the most effective sector of environmental protection in most industrialized European countries. In conceptual terms, the urban environmental regime

divided the Baltic Sea into two distinct realms. Coastal waters, particularly those near cities, were seen as valuable human environments needing protection, whereas the open sea areas long remained as pristine nature outside of the human sphere. Nevertheless, the fact that water connected the Baltic Sea region provides interesting perspectives for exploring how European environmental history can be approached through water.

The second environmental regime was developed on the international level in the Baltic Sea region because the first sea to face severe environmental deterioration in its entirety was the Baltic Sea. Since the 1960s, almost the whole sea was affected by different kinds of pollution. Consequently, the Baltic Sea was recognized relatively early as one of principal concerns in the environmental politics of the littoral states. Concerted efforts to improve, and hopefully revive, the state of the Baltic Sea, based on the mutual understanding of the marine problems, already began in the 1970s. Therefore, the Baltic Sea has been employed in this chapter as a negative example as well as a positive model when building institutions for managing other European seas. Environmental problems also changed the way in which people imagined the sea. The entire sea was perceived as a polluted environment that threatened the well-being and even health of human societies. Yet, environmental awareness of these challenges remained problem centred and utterly anthropocentric.

The third environmental regime consisted of European cooperation. The entry of the United Nations and the European Union into marine policy reflects a profound change in the environmental history of European seas. In the closing years of the twentieth century, the awareness about the marine environments reached both European and global scales, highlighting the role of marine ecosystems in sustaining all life on Earth. The European regional seas called attention to this global concern by acting as a warning of the dire consequences to be faced if the marine crisis was left unrecognized.

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