13 Military use

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Military exercises regularly take place in the Belgian part of the North Sea (BNS) and in the coastal area. These include target practice from land towards the sea, target practice at sea towards floating targets, detonation of found war materials, exercises in laying, searching for and sweeping mines with several NATO member states, etc. Amphibian, rescue and flight exercises are carried out as well, and Belgian Defence is also involved in search and rescue operations, law enforcement, pollution control, etc. in the BNS (Notices to Mariners (NtM) 2023 No. 1, Belgian Defence). For this purpose, specific zones are reserved in the marine spatial plan (MSP) (MSP 2020-2026, annex 1) (RD of 22 May 2019) (figure 1).

In addition to the current use of the North Sea for military purposes, the BNS still contains traces of past wars. For example, there is an extensive World War I dump site of war munitions located on a sandbank near Knokke-Heist, the so-called *Paardenmarkt*, and the seabed is littered with the wrecks of military ships (Wrakkendatabank) (see thematic chapter **Maritime and cultural heritage**).

Within the framework of NATO, Belgian Defence is also providing a contribution to the organisation of an information hub for commercial shipping, and to proactively contact ships in high-risk zones (Naval Cooperation and Guidance for Shipping (NCAGS), see NtM 2023 No. 1 notice 1/7).

The naval component of the Belgian Ministry of Defence is also developing activities outside the BNS. In cooperation with FPS Mobility and Transport, Belgian Defence provides support for vessels navigating the Belgian flag. Belgian Maritime Threat Awareness and Reporting (BEMTAR) provides information on the maritime safety situation, identifies threats and monitors ships worldwide.

In the remainder of this text, however, the focus will be mainly on the activities within the BNS.

13.1 Policy context

The policy relating to military activities is a federal matter attributed to the Ministry of Defence (Belgian Defence). An overview of the legislation with regard to the military activities (at sea) is provided in the Codex Coastal Zone, theme Military Activities and NtM 2023 No. 1.

13.2 Spatial use

The marine spatial plan (MSP 2020-2026, RD of 22 May 2019, see also Verhalle and Van de Velde 2020) indicates a number of zones reserved for military activities (figure 1, Coastal Portal). Attention is paid to compatibility with other (potential) users, such as shipping traffic, renewable energy zones, nature functions (marine mammals, breeding season of birds) and other new developments (alignment with zones for commercial and industrial activity (CIA), art. 23 MSP 2020-2026). The coordinates of these areas, and situational restrictions, are communicated via Notices to Mariners (*Berichten aan Zeevarenden*) and visualised in nautical charts (NtM 2023 No. 1, Flemish Hydrography, MSP 2020-2026, annex 1).

13.2.1 The role of Belgian Defence in the coastal zone and the BNS

Military activities and exercises regularly [1]take place in demarcated areas in the BNS and the coastal zone (Flemish Hydrography, Coastal Portal, NtM 2023 No. 1, mil.be). These include:

- Target practices from land towards the sea (carried out by the land forces). These practices take place among others from the military base (beach) in Lombardsijde. Appropriate signs and announcements are provided (see also mil.be) The practice area is divided into three sectors (K-small, M-medium and G-large), depending on the weapons used (NtM 2023 No. 1, see notices 1/66, 1/67 and 1/68) (figure 1):
  - > The K-sector: the dangerous zone is located within a sector with a radius of 2.5 miles around the Nieuwpoort lighthouse, bounded by mark 114° from the Nieuwpoort lighthouse and 191° from the former water tower of Westende (position 51° 10', 14 N - 2° 46', 62 E);
  - > The M-sector: the dangerous zone is located within a sector with a radius of 7.5 miles around position 51° 08', 62 N - 2° 46', 15 E, bounded by the same marks as the small sector;

[1] Every year, the Lombardsijde military base is available for various military activities during more than 60 days. In function of the operational needs of the Belgian Defence, the number of days can change. In principle, shooting exercises towards the sea are never organised on Saturday and Sunday, public holidays or in July and August (mil.be).

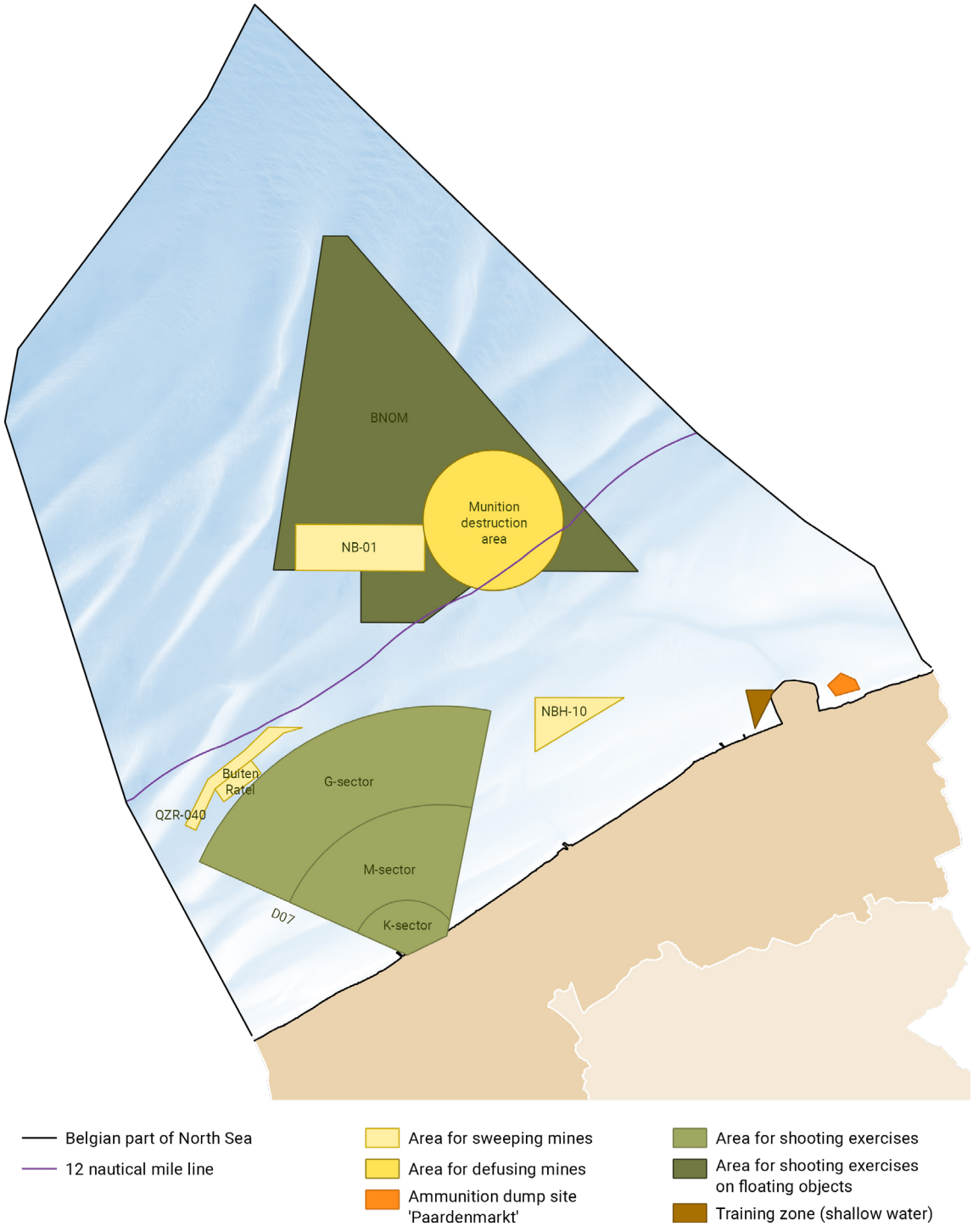

Figure 1. The demarcation of the military training zones in the BNS (Source: RBINS, MarineAtlas.be (based on RD of 22 May 2019) (MSP 2020-2026), Coastal Portal, Flemish Hydrography).

> The G-sector: the dangerous zone is located within a sector with a radius of 12 miles around position 51° 08', 62 N - 2° 46', 15 E, bounded by the same marks as the previous sectors.

- Exercises on laying and sweeping mines. These international exercises take place in two smaller areas, NB-01 (between Goote Bank and Westhinder, for exercises in deep water) and NBH-10 (between Wenduine and Ostend Bank, for exercises in shallow water). For certain manoeuvres, or due to weather conditions, it may be necessary to navigate outside of these areas. If necessary, the training zones can be extended to a circular detonation zone and towards the port of Ostend;

- Detonation exercises with practice mines. These exercises take place in the circular area (see also figure 1; 'munition destruction area') in the south-eastern part of the Belgian national training area for naval vessels (BNOM zone, zone Thornton Bank-Gutter Bank). After the exercises, the practice mines are removed;
- Detonation of historical (war) mines. On a regular basis, real war mines are found by ships, fishermen or dredgers (see also **13.4.2 Impact on other users**). The management of mines and explosives (Unexploded Ordnance, UXOs) fished up at sea must be carried out in accordance with NtM 2023 No. 1, see notice 1/14. Such mines are also detonated in the circular area, except in case of an emergency when the mine appears to be immovable (NtM 2023 No. 1, see message 1/69);
- The QZR 040 zone and the zone *Buiten Ratel* are practice areas used by the International Naval Mine Warfare school EGUERMIN in Ostend for Naval Mine Counter Measures (NMCM) training (NtM 2023 No. 1, see notice 1/70);
- Amphibian, rescue and flight exercises. Amphibian- and rescue exercises take place in a new training zone in shallow water west of the port of Zeebrugge (Coastal Portal, MSP 2020-2026);
- Extensive exercises by several NATO member states. Such international large-scale exercises are held in the BNS every two years. NATO determines the location of the exercises, although the large BNOM zone and the NBH-10 zone are the most likely training zones.

In addition to the different training activities, the naval vessels and resources of the Belgian Defence are used for military operations, including the Maritime Situational Awareness (MSA) for escorting and monitoring foreign vessels as well as for a wide range of specific military security interventions (e.g. Maritime Security Operations – MSO).

In the event that non-Belgian military vessels wish to navigate in territorial waters, this must be reported in advance and, if necessary, political approval must be obtained (RD 30 December 1923). There is an existing procedure for this in which the country's embassy requests prior approval from the FPS Foreign Affairs (dipclear-procedure). Submarines are required to sail on the surface when passing through the territorial sea. In case of submarine accidents, a specific Distressed Submarine procedure is activated (DISSUB, see NtM 2023 No. 1, notice 1/13).

13.2.2 Military bases[2]

The following bases are located in the coastal area:

- Quarter Lombardsijde (Nieuwpoort/Middelkerke);
- Quarter Adjudant Vlieger F. Allaeys (Koksijde[3]) (from 2023 onwards operational from Ostend-Bruges international airport);
- Naval barracks Bootsman Jonsen (Ostend), including the Naval Mine Warfare school EGUERMIN;
- Naval base Zeebrugge (Zeebrugge);
- Quarter LTZ V. Billet Damage Control center (Brugge Sint-Kruis);
- Damage Control Center (Brugge).

Thare are aslo a number of military domains in the coastal zone that have a management protocol with the Flemish Region (in general the Agency for Nature and Forest (ANB), see also **13.5.4 The management of military domains**):

- Camp Lombardsijde in Nieuwpoort/Middelkerke (54 ha);
- Camp *'t Pompje/* military domain Schorreweide in Oudenburg (62 ha).

[2] In this thematic chapter, frequent reference is made to quarters, bases, domains, camps. On the basis of personal communication with Belgian Defence, the following demarcation is proposed (these are not official guidelines):
- Quarters/Barracks: refers more to the land-based aspect and specifically to the infrastructure including the buildings, meeting rooms, dormitories, etc.;
- Base: relates mainly to air and naval forces and refers to the domain where, in addition to infrastructure such as buildings and roads, aircraft or ships are also present. For example, Kleine Brogel air base, Zeebrugge naval base, etc;
- Domain: one refers to a military domain when it concerns the spatial aspect and the delimitation of a certain zone as being not accessible to the public. For example, the military training area of Ryckevelde;
- Camp: refers to a larger military domein including practice areas, quarters, barracks (military buildings). E.g. quarter Lombardsijde.

[3] Proposals on how the reconversion of the military base of Koksijde can be shaped, are outlined in a scoping note.

13.2.3 Historical dump site of military munition

According to OSPAR, over 150 dump sites have been identified throughout the north-east Atlantic Ocean (OSPAR 2010). After WWI, the Belgian military dumped German war munition on a large scale a few kilometres off the coast of Knokke-Heist on a shallow sandbank called *De Paardenmarkt*. At least 35,000 tonnes of munitions are estimated to be buried under 2-6 m sediment (Monjoie et al. 2005) of which about one third is assumed to consist of poison gas shells. However, there are indications suggesting that this proportion may be significantly higher (Missiaen 2013). The zone is a pentagon of about 3 km^2 (Missiaen et al. 2002). The official coordinates of the pentagon are included in the marine spatial plan (RD of 22 May 2019, MSP 2020-2026). In this pentagon, all bottom-disturbing activities are prohibited (RD of 20 March 2014). Exception can be made for scientific research and management activities, provided that a risk analysis is drawn up according to an as yet to be published procedure (RD of 22 May 2019, MSP 2020-2026, Art. 18).

13.3 Societal interest

The Belgian Navy performs a wide range of tasks both on a national and international level. The core tasks of the Navy include: securing maritime trade routes, destroying explosives at sea, taking part in operations in NATO, UN, and EU context, controlling the territorial and exclusive economic zone, humanitarian operations, rescue operations at sea, tracing wrecked ships, and supporting diplomacy, trade and other departments (Belgian Defence). Below, a number of sea-related tasks and roles performed by the Belgian Defence, in addition to the defence of the Belgian territorial sea, are elaborated upon.

- In case of emergency or an ecological disaster in the Belgian marine areas, the Channel or the North Sea, the Belgian Defence offers support and assistance, and provides helicopters, a 'ready duty ship' and divers (General Emergency and Intervention Plan (ANIP) North Sea). The deployment of additional staff and military resources can be requested through the Provincial Commander of West Flanders (Belgian Defence, Guidelines for Homeland Operations);
- Through the Maritime Security Centre Belgium (MIK) in Zeebrugge and the Maritime Rescue and Coordination Centre (MRCC), the Belgian Defence constitutes a part of the operational branch of the Coast Guard Centre (de Kustwacht 2011) (see thematic chapter **Maritime transport, shipping and ports**). MIK is comprised of four Coast Guard partners (Belgian Defence, Maritime and River police, Customs and FPS Mobility and Transport) that work closely together based in the naval base in Zeebrugge. The organisation and responsibilities of MIK are stipulated in the RD of 6 February 2009. The MRCC coordinates SAR operations and, in addition to distress, emergency and safety traffic, provides notifications to shipping vessels through the Ostend Radio, both inland and at sea (Belgian Coastal Station, Ostend Radio, NtM 2023 No. 1, see notice 1/4). The Belgian Defence also intervenes in case of pollution on the North Sea, SAR operations and in case of the detonation of explosives at sea;
- The Belgian Navy is responsible for the detection of violations in the Belgian territorial waters (Law of 13 June 1969, Law of 22 April 1999, Law of 16 December 2022). The Belgian Navy collaborates with the Management Unit of the Mathematical Model of the North Sea (MUMM) of the Royal Belgian Institute of Natural Sciences (RBINS-MUMM) to detect and tackle pollution at sea. The Regent Decree of 30 March 1946 grants other specific competences to the Belgian Navy regarding marine and coastal mine sweeping and the surveillance of fisheries. In this context, the Belgian Navy does on-board inspections of fishing vessels in cooperation with the Fisheries division of the Department of Agriculture and Fisheries;
- The Belgian Navy is also responsible for the operation of the marine research vessel Belgica and the Coast Guard surveillance aircraft (the *Britten-Norman Islander*), aimed at combating air pollution at sea. Both are managed by the MUMM (RBINS-MUMM). Belgica was replaced by a new research vessel, Belgica II, in the autumn of 2021;
- To carry out its tasks at sea, the Belgian Navy relies on 14 warships and four support ships, including a sailing ship, two tugboats and a research vessel (Belgica II). This fleet is being systematically modernised. In 2019, new contracts were signed with the Dutch Navy for the renewal of the frigates and mine counter measures (mcm) vessels (first delivery expected in 2024). This large-scale investment is accompanied by the necessary spillovers towards the Belgian economy, including a new drone factory to be built in Ostend, along with new centres of expertice, etc. (Belgium Naval and Robotics, ECA Group, Naval Group);
- The Belgian Navy is also responsible for the training of foreign naval officers. The Belgium-Holland Naval Mine Warfare school EGUERMIN in Ostend trains students of NATO-countries in mine counter measures (MCM) at sea. The Naval Mine Warfare Centre of Excellence (NMWCE) in Ostend advises NATO on all aspects of MCM at sea. The Mission Support Centre has an extensive database of seabed data collected during annual campaigns funded by Navy resources. In this context, it also collaborates with universities;
- Additionally, the law regulating the protection of the underwater cultural heritage (Law of 23 April 2021)

introduced a notification requirement for found items which the discoverer may suspect to be cultural heritage. Following this law, the Navy Commando asks ship commanders to report discoveries in the territorial sea, the exclusive economic zone or on the continental shelf to the Governor of West Flanders who takes on the role of receiver of the underwater cultural heritage (see also the website of vondsteninzee.be and the thematic chapter **Maritime and coastal heritage**).

13.3.1 Employment

With several bases and quarters along the coast, the Belgian Defence provides important direct and indirect employment. In 2020, direct employment in the coastal region amounted to 2,161 employees (table 1). Indirect employment stems from various maintenance companies which employ their staff at the bases (e.g. vessels maintenance), as well as companies that perform occasional assignments for the Navy, either at the naval base or at their own shipyards. Furthermore, the suppliers responsible for supplying the quarters and ships should also be taken into account (Belgian Defence).

Table 1. The direct employment numbers at the army quarters and bases in the coastal zone in 2022 (Belgian Defence).

Base	Employment (2022)
Zeebrugge (naval base, including crew)	1,000
Ostend (Naval Mine Warfare school)	90
Lombardsijde (practice area + medical detachment)	273
St-Kruis (training navy, including Dutch colleagues in the context of binational activities)	317
Koksijde (airbase)	135
Total	**1,815**

13.4 Impact

13.4.1 Impact on the environment

13.4.1.1 Military activities on the BNS and seaward target practice

The potential impact of military activities on the BNS and seaward target practice on the marine environment is discussed in detail by Degraer et al. (2011). Exercises on the detection of mines and submarines, using sonars (zones NB-01 and NHB-10) may have a negative effect on marine mammals and fish (Degraer et al. 2011, De Cauwer and Van Gaever 2019). Exercises with explosives/target practices can also disrupt marine animals and birds (Degraer et al. 2011). The mitigating measures taken by the Ministry of Defence in this context, in accordance with the marine environment Law of 16 December 2022 and marine spatial planning (MSP 2020-2026, RD of 22 May 2019), are discussed in section **13.5 Sustainable use**.

Munition that ends up on the seabed during exercises is not cleared, except for practice mines. This may have a local negative impact on the ecosystem, due to the risk of leakage of copper and lead from munition, although the effect of this leaching may be smaller than the leaching due to other activities (Derous 2005 (GAUFRE project BELSPO), Maes et al. 2005, Degraer et al. 2011).

The target practices from land towards sea take place near the *De IJzermonding* nature reserve (Yser Estuary, including the recently established Nieuwpoort beach reserve) and near the Habitats Directive area of the 'Flemish Banks'. Additionally, two marine Birds Directive areas (special protection area 1 and 2) and the Ramsar area 'Western Coastal Banks' (designated for seaducks and grebes living there) are located in the vicinity of the target practice sector. The negative impact on fauna can be partially reduced by proper timing, taking account of the presence of marine mammals and large concentrations of disturbance-sensitive seabirds and the breeding season (Degraer et al. 2011, MSP 2020-2026 annex 1).

13.4.1.2 Historical dump site of war munition

The release of chemicals from munition found at the *Paardenmarkt* site, such as mustard gas, Clark components and TNT (e.g. see Francken and Ruddick 2003, Francken et al. 2006, Francken and Ruddick 2007, Francken and Hafez 2009, Missiaen 2013), may lead to the pollution of sediment, the water column, and can disturb the food chain (e.g. OSPAR QSR 2010, Law et al. 2010, De Cauwer and Van Gaever 2019). An overview of the scientific research conducted on the impact of the ammunition storage at the Paardenmarkt site up to 2009 can be found in Missiaen and Henriet (2010).

The monitoring campaign of 2018 demonstrated for the first time traces of explosive residues and combat gases, centrally located in the site, which was confirmed by a second campaign in 2019. The measured values are well below the maximum permitted concentrations for these substances and do not pose a danger to public health. At present, however, scientific knowledge is inadequate for a reliable assessment of the state of the site (DISARM-project) (see **13.5.3 Measures for historical dump site of war munition**) (FPS Public Health).

13.4.2 Impact on other users

The military activities on the BNS are organised in such a way that conflicts with other users are avoided as much as possible. Non-military shipping is only prohibited within the various military training zones in the event of a military activity.

Unexploded war materials (unexploded ordnances, UXOs) constitute a potential danger for different users of the sea, such as fishermen, dredgers, offshore energy developers. Localised or retrieved explosives will be marked and reported to the Coast Guard. A mine action team then disarms the explosive. The procedure to be followed in Belgium when mines or explosives are encountered can be found in NtM 2023 No. 1, see notice 1/14 and the Explosives Chart. In order to keep the sea, coastal waters and harbour channels free of mines, the Belgian Navy has entered into an international cooperation with the Dutch Navy: BENEFICIAL COOPERATION. In the first instance, the problem of the remaining explosives from the First and Second World Wars will be addressed.

13.5 Sustainable use

13.5.1 Measures for seaward target practice

The target practices that occur in the coastal area of Nieuwpoort-Lombardsijde are subject to restrictions in order to reduce social and ecological nuisance. No target practices take place on Saturdays, Sundays, and on public and school holidays, and these exercises only take place during the day (see **13.2.1 The role of Belgian Defence in the coastal zone and the BNS**). The periods when the target practices are suspended, are provided in the NtMs (NtM 2023 No. 1, see notice 1/67A) and on the website of Belgian Defence. Infringements and complaints relating to the target practice regulations can be submitted to the Federal Police.

The target practices take place near the *De IJzermonding* nature reserve and in the marine areas of the western coastal zone, which are protected by the EU Birds Directive (Directive 2009/147/EC) and Habitats Directives (Directive 92/43/EEC) (see also **13.4.1 Impact on the marine environment**). The effects of these target practices on the environment can be reduced by a proper timing (for example, no target practices during the breeding season or by taking account of the presence of marine mammals) (Maes et al. 2005, GAUFRE project BELSPO, Degraer et al. 2011).

13.5.2 Measures for military activities at sea

On an international level, naval ships need to respect the regulations stipulated in the United Nations Convention on the law of the sea (UNCLOS 1982). The current trend for naval vessels is to be exemplary in ecological terms. Within NATO there is a special working group responsible for this (Nato Naval Armaments Group (NNAG) AC/141 - SWG12). The purpose of this working group is to promote the exchange of information and the development of solutions between the NATO navies in order to comply with national and international regulations for the protection of the marine environment and to jointly launch initiatives to build up an environmentally friendly fleet. In order to set an example, NATO has adopted the principles of the MARPOL and London Conventions and has adapted them to the specific requirements of naval vessels. Technically, the treaties are not applicable to military vessels, but military vessels do make the necessary efforts to respect these regulations. This has resulted in a

series of publications such as the Allied Maritime Environmental Protection Publication (AMEPP). Each of these publications treat a specific aspect of maritime environmental protection. The purpose of these documents is to provide a clear, general guideline for naval architects and designers of naval systems, in accordance with the treaties mentioned above. On the basis of the AMEPP publications, the environmental legislation is incorporated in the design of new ships with minimal impact on the operational capacity, readiness, safety, survival and comfort of the crew.

The impact of military activities on the marine environment is in principle not covered by environmental policies and treaties, such as the international ASCOBANS Agreement. The impact of military activities (noise) on small cetaceans is being studied in the framework of this agreement and calls upon the introduction of mitigating measures in cooperation with military authorities, e.g. see Bräger et al. (2010) and the European Marine Strategy Framework Directive (MSFD, Directive 2008/56/EC) (e.g. descriptor 11 Energy, incl. Underwater Noise). Within the MSFD, it is proposed to take into account the effects of military activities on the environment in the framework of the Natura 2000 sites protected by the European Birds and Habitats. Habitats Directive Article 6 (paragraphs 3 and 4) provides a balanced framework to deal with potential conflicts between military activities and nature conservation at sea (Guidelines for the establishment of the Natura 2000 network in the marine environment 2007, Natura 2000 EC). In the revision of the initial assessment for the Belgian marine waters (under MSFD obligations) it is reported that no measurements of underwater noise were collected in the BNS during the detonation of ammunition dumped at sea. This noise is most likely about of the same magnitude as pile driving for offshore wind turbines (Belgian State 2018). Research has shown that the destructive effect of such shock waves can be large and far-reaching, e.g. several tens of km for a 250 kg bomb (von Benda-Beckmann et al. 2015).

The national measures aimed at protecting the marine environment (see thematic chapter **Nature and environment**) are in force on military activities, with the exception of activities of the Belgian Armed Forces or allied forces, which are urgent or essential for the protection of public order and public security, including the defence of national territory (Law of 16 December 2022). Degraer et al. (2011) proposed a number of measures to mitigate the impact of military shipping, the detonation of ammunition at sea, the use of sonars, chemical pollution, etc. In this context, Belgian Defence has purchased 'pingers' to chase off marine mammals during mine sweeping exercises or during the detonation of underwater ammunition.

The testing of nuclear weapons in the BNS has been prohibited by law since 1966 (5 August 1963 – Convention for the banning of experiments with nuclear weapons). The abandonment of nuclear weapons or weapons of mass destruction outside territorial waters has been prohibited since 1973, and from 1999 onwards, this ban applies to the entire BNS based on the Law of 18 August 1972 (GAUFRE project BELSPO). In 2023, the fifth periodic evaluation was published regarding the objectives set in the OSPAR strategy for radioactive substances (OSPAR QSR 2023). The results suggest that the member states involved are making good progress in preventing radioactive pollution in the marine environment. New strategic and operational objectives to further reduce radioactive pollution have been set in OSPAR's North East Atlantic Environment Strategy.

Finally, the Royal Military Academy is conducting research on the optimisation and sustainability of military activities at sea (Mees et al. 2018).

13.5.3 Measures for historical dump sites of war munition

On an international level, the London Convention (1972) and the OSPAR Convention (1992) prohibit the dumping of waste or other matter, including chemical waste. The dumping of chemical weapons at sea was eventually prohibited with the ratification of the Chemical Weapons Convention (CWC) in 1997. OSPAR also published a recommendation for reporting conventional and chemical ammunitions in the OSPAR area (OSPAR Recommendation 2010/20).

On the European level, the MSFD constitutes an important framework for measures against pollution from ammunition in offshore dump sites. Two of the descriptors in the MSFD to determine a Good Environmental Status (GES) are related to the concentration of pollutants: descriptor 8 (concentrations of contaminants) (Law et al. 2010) and descriptor 9 (contamination in fish and seafood) (Swartenbroux et al. 2010). The revision of the initial assessment for Belgian marine waters (in the context of MSFD obligations) did not include the leakage of ammunition and monitoring of these chemicals (Belgian State 2018). Given the fact that the dumping site at the *Paardenmarkt* sandbank is situated within territorial waters (12 nautical miles (nm) seaward) and partly within coastal waters (3 nm), the European Water Framework Directive (WFD, Directive 2000/60/EC) offers a relevant legislative framework in case of pollution. The WFD and the MSFD have been incorporated in Belgian legislation by the RD of 23 June 2010 (surface water status) and the RD of 23 June 2010 (marine strategy) (see also thematic chapter **Nature and environment**).

Due to its short distance from the coast and the shallow location, and given the fact that the dumping area is partly situated inside the Birds Directive area, Special Protection Area (SPA) 3, it is crucial to monitor the *Paardenmarkt* ammunition dump site on a regular basis (e.g. Missiaen et al. 2002, Missiaen 2013). DG Environment along with OD Nature (RBINS) and Belgian Defence (divers) coordinates regular sampling at the *Paardenmarkt* in order to timely detect any leaks of pollutants from the ammunition (OD Nature). To this end, the technique of passive samplers has been used for some time now (e.g. see Monteyne et al. 2013, ICES WGMS Report 2015). Up to now, it has always been recommended to leave the munition dump site untouched for the time being and to monitor it thoroughly (e.g. Missiaen and Henriet 2010, Degraer et al. 2011). However, in response to the recent detection of chemical pollutants in the water (see **13.4.1 Impact on the marine environment**), monitoring efforts have increased in order to get a better picture of the situation and several additional studies are planned for the coming years to develop a sustainable management strategy for the site (FPS Public Health). For example, the SBO project DISARM (2020-2023) will conduct further research on the *Paardenmarkt* to substantiate the various management options for the site. This multidisciplinary project aims to evaluate the risk of explosion and to draft a chemical risk profile for people and the environment. This will allow different management options to be substantiated worldwide, with the *Paardenmarkt* munitions dump as a challenging case study. Additionally, recently within the Programme for Innovation Procurement (PIP) of the Government of Flanders, on the initiative of the Department of Mobility and Public Works (MOW) and the Maritime Access division, a project ran concerning a test removal of dumped war ammunition at the *Paardenmarkt*. After an extensive market consultation in 2020, it was decided not to continue with the PIP project. Finally, the Policy Statement by the minister for the North Sea indicated that further research to support the management of the Paardenmarkt munitions dump would be continued over the coming years (Van Quickenborne 2020, summary market consultation report Maritime Access division).

In addition to buried ammunition dumps at sea, ammunition can also be found in wrecks on the seabed. In this context, the North Sea Wrecks project (2018-2022) provides spatial planners, competent authorities, economic actors and other stakeholders with the necessary tools to evaluate and propose risk reduction solutions for wrecks and munition in the North Sea. Finally, within the BASTA project research is being carried out into how more detailed mapping of the seabed can contribute to improved detection of underwater ammunition.

13.5.4 The management of military domains

International (military) organisations (UN, NATO, EU member states) as well as federal, regional and local authorities issue environmental laws and regulations to limit the impact of human activities on people and our surrounding environment. The Belgian Defence applies these laws and regulations in accordance with the general policy of the Ministry of Defence and taking account of the military specificity (Policy Form Environmental policy).

Two military domains in the coastal area (owned by the Ministry of Defence) are managed by the Agency for Nature and Forest (ANB) through a cooperation protocol: camp Lombardsijde and camp *'t Pompje*. The military function prevails and sets certain preconditions, but the often unique ecological as well as recreational/economic values are recognised and managed accordingly (Dumortier et al. 2009, RESTORE project). The environmental technical management plan concerning the dunes of the military domain Camp Lombardsijde was drafted by Degezelle and Hoffmann (2002). The military base in Koksijde will be redeveloped in the near future. Ideas about the possible future destination have been drawn up in a master plan. In addition to a further expansion of recreational aviation, the plan also looks at possibilities for businesses, new bicycle connections, additional sports and youth facilities and nature development.

Legislation reference list

Overview of the relevant legislation on international ('Year A': adoption; 'Year EIF': entry into force), European, federal and Flemish level. For the consolidated European policy context see Eurlex. The national legislation can be consulted on the Belgian official journal and the Justel-database, the Flemish legislation is available on the Flemish Codex.

International conventions and agreements			
Acronyms	**Title**	**Year A**	**Year EIF**
Test Ban Treaty	Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water	1963	1966
Seabed Arms Control Treaty	Treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the sea-bed and the ocean floor and in the subsoil thereof	1971	1972
RAMSAR	Convention on wetlands of international importance, especially as waterfowl habitat	1971	1975
London Convention	Convention on the prevention of marine pollution by dumping of wastes and other matter	1972	1975
MARPOL	International Convention for the prevention of pollution from ships, as modified by the Protocol of 1978	1973	1978
UNCLOS	United Nations Convention on the law of the sea	1982	1994
ASCOBANS	Agreement on the conservation of small cetaceans of the Baltic, North East Atlantic, Irish and North Seas	1991	1994
OSPAR	Convention for the protection of the marine environment of the North-East Atlantic	1992	1998
CWC	Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction	1993	1997
Scheldt Treaty	Scheldt Treaty	2002	2005

European legislation and policy context			
Document number	**Title**	**Year**	**Number**
Directives			
Directive 92/43/EEC	Directive on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)	1992	43
Directive 2000/60/EC	Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)	2000	60
Directive 2008/56/EC	Directive establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)	2008	56
Directive 2009/147/EC	Directive on the conservation of wild birds (Birds Directive)	2009	147

Belgian and Flemish legislation		
Dates	**Title**	**File number**
Decisions of the Govt. of Flanders		
Regent's Decree of 30 March 1946	Besluit betreffende oprichting en organisatie van de Marine	
Royal Decrees		
RD of 30 December 1923	Koninklijk besluit inzake toelating van vreemde oorlogsschepen in de wateren en havens van het Koninkrijk	1923-12-30/01
RD of 6 February 2009	Koninklijk besluit tot oprichting en organisatie van het maritiem informatiekruispunt	2009-02-06/39
RD of 23 June 2010	Koninklijk besluit betreffende de vaststelling van een kader voor het bereiken van een goede oppervlaktewatertoestand	2010-06-23/04
RD of 23 June 2010	Koninklijk besluit betreffende de mariene strategie voor de Belgische zeegebieden	2010-06-23/05
Laws		
Law of 13 June 1969	Wet inzake de exploratie en de exploitatie van niet -levende rijkdommen van de territoriale zee en het continentaal plat	1969-06-13/30
Law of 18 August 1972	Wet houdende goedkeuring van het Verdrag tot verbod van de plaatsing van kernwapens en andere wapens voor massale vernietiging op de zeebedding en de oceaanbodem en in de ondergrond daarvan, opgemaakt te Londen, Moskou en Washington	1972-08-18/32
Law of 22 April 1999	Wet betreffende de exclusieve zone van België in de Noordzee	1999-04-22/47
Law of 4 April 2014	Wet betreffende bescherming van het cultureel erfgoed onder water	2014-04-04/07
Law of 16 December 2022	Wet ter bescherming van het marien milieu en ter organisatie van de mariene ruimtelijke planning in de Belgische zeegebieden	2022-12-11/01