

Limited Atlas of the Belgian Part of the North Sea

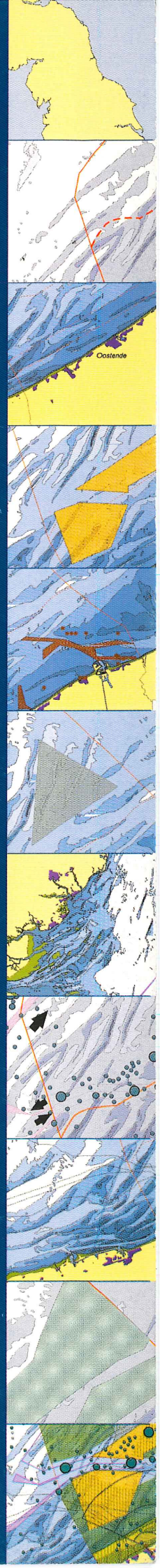
FRANK MAES

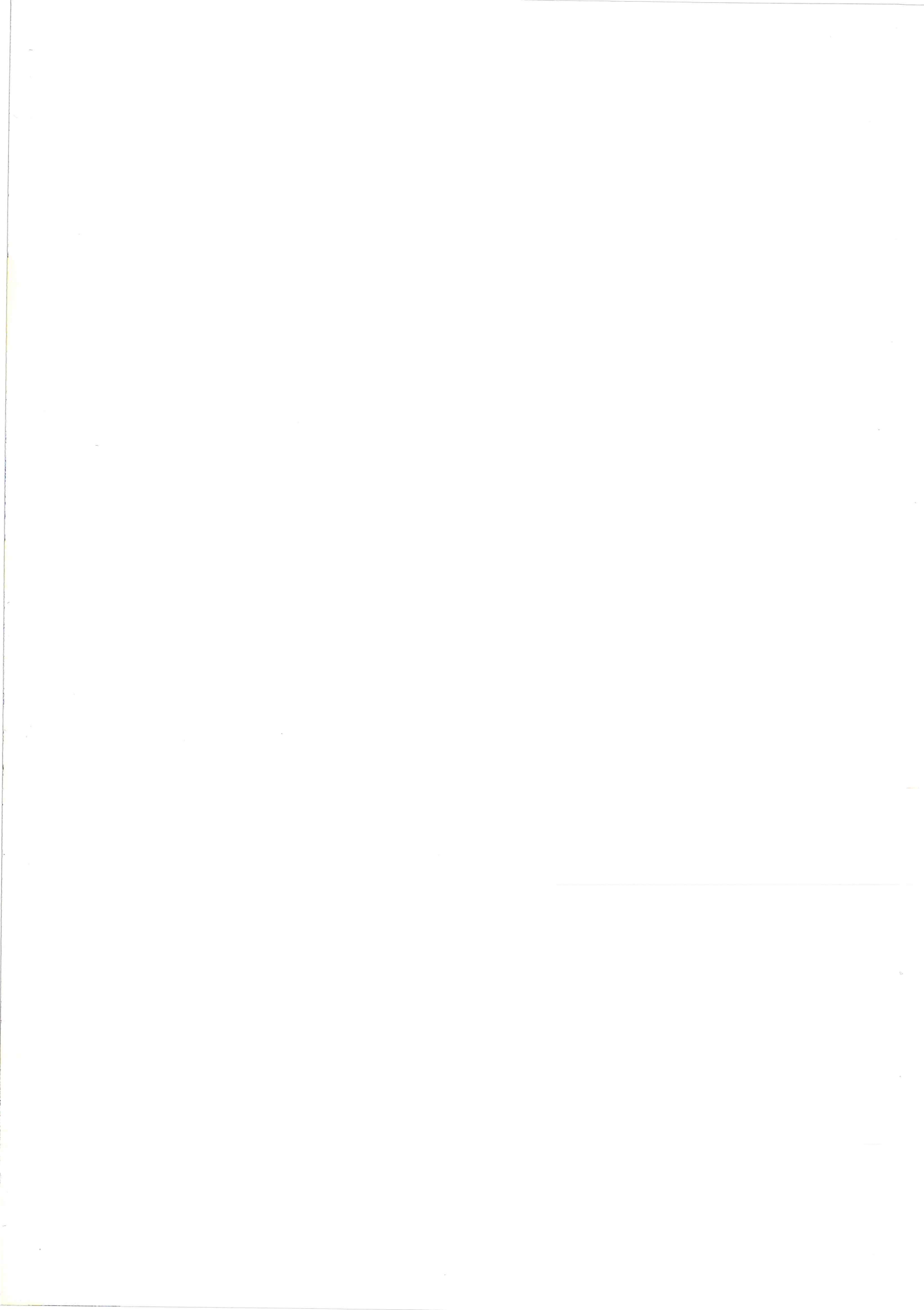
AN CLIQUET

JAN SEYS

PATRICK MEIRE

HENK OFFRINGA





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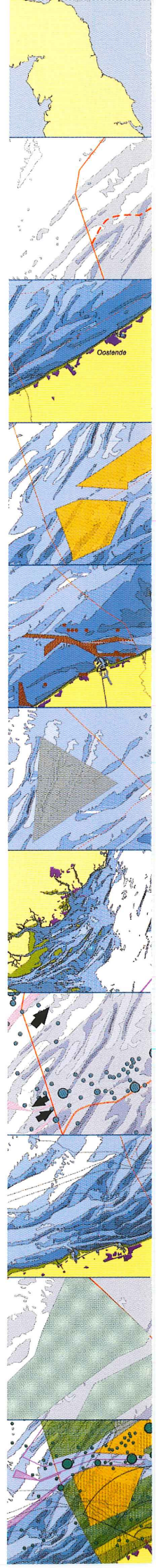
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Introduction

In order to take measures for the protection of the marine environment, knowledge on the spatial distribution of the different uses of the North Sea and on the natural values of the Belgian maritime waters is required. For an integrated coastal zone and marine management it is important to get a clear view on the overlap and possible conflicts between the different user groups and the natural values of the environment. The aim of this atlas is to give an overview of the most important user functions of the Belgian part of the North Sea. As this atlas is meant as an instrument for environmental protection, only those functions thought to affect the marine environment substantially are described.

In this atlas the following maps are presented: the division of the maritime zones in the North Sea according to the law of the sea; the Belgian maritime zones in the North Sea; sand and gravel extraction; dredging; industrial waste sites, dumping site for war munition, military exercises; the main shipping routes and vessel traffic separation schemes along the Belgian coast; operational ship-borne pollution (1991-1995) in the Belgian part of the North Sea; cables and pipelines in the maritime area within Belgian jurisdiction; important bird areas and tools for the protection of the marine environment.

In most cases the map is limited to the area of the Belgian continental shelf. However, for some maps a larger area was considered necessary. This is the case for the first map, which situates the Belgian continental shelf in the whole of the North Sea and for map 7, indicating the main shipping routes in the southern part of the North Sea. Map 9 shows the pipelines and cables that cut the Belgian continental shelf.

This atlas is mainly the result of a research project «The Belgian policy concerning the protection of the North Sea», conducted in the framework of the Impulsprogramme for Marine Sciences and financed by the Belgian federal government (Federal Office for Scientific, Technical and Cultural Affairs)¹. The results for the most important bird areas are derived from research projects carried out at the (Flemish) Institute of Nature Conservation.

The maps are based on data from official charts and communications. Original data on seabird distribution, collected by the Institute of Nature Conservation, are presented in map 10. The information has been imported in the ArcView GIS-software package, with positions referring to European Datum (1950). Maps were produced in a standard Mercator projection.

¹ Maes, F. en Cliquet, A., Het Belgisch beleid inzake de bescherming van de Noordzee, Project in het kader van het Impulsprogramma Zeewetenschappen, Federale Diensten voor Wetenschappelijke, Technische en Culturele Aangelegenheden (DWTC), Gent, 1996, 1255 p. + inhoudstafel, bibliografie en kaartbijlage; this project resulted in the following book: Maes, F. en Cliquet, A., Het internationaal en nationaal recht inzake de bescherming van de Noordzee, Antwerpen, Kluwer Rechtswetenschappen, 1997, 733p.

M A P



Division of the maritime zones in the North Sea according to the law of the sea

There are six maritime zones in the North Sea within the jurisdiction of the coastal states: internal waters, territorial seas, contiguous zones, continental shelves, exclusive economic zones, and fishery zones. The high seas are the zone beyond the zones of coastal jurisdiction, governed by the freedom principles. This means that the high seas of the North Sea are open to all states for, inter alia, navigation, overflight, laying of cables and pipelines, exploitation of natural resources, and scientific research. Every maritime zone is measured from the baseline. The baseline can be a normal baseline (the low-water line along the coast as marked on large-scale charts officially recognised by coastal states) or in exceptional cases a straight baseline (where the coastline is deeply indented or a fringe of islands lies in the immediate vicinity of the coast). In every zone the jurisdiction of the coastal states depends on the legal status of the zones in the law of the sea conventions. The latest law of the sea convention is the Montego Bay Convention or the United Nations Convention on the Law of the Sea, signed in 1982, in force since 16 November 1994 for 130 states (including Belgium).

Internal waters are those waters on the landward side of the baseline, under the full sovereignty of the coastal states. They include bays, estuaries, coastal harbours, and waters enclosed by straight baselines.

The territorial sea is that part of the sea which is adjacent to the land territory and internal waters of the coastal states, up to a limit not exceeding 12 nautical miles from the baseline.

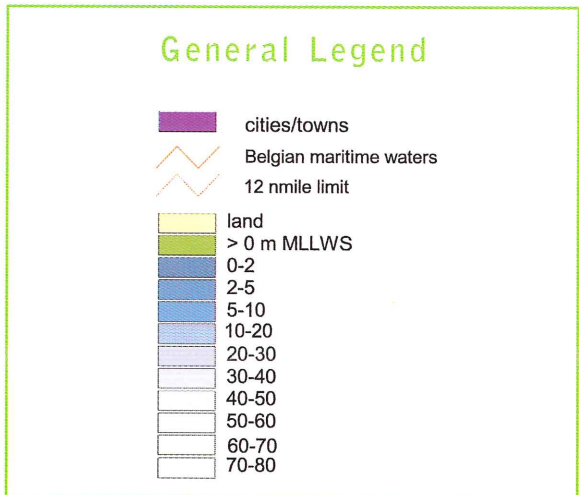
The contiguous zone is a zone adjacent to the territorial sea, extending no further than 24 nautical miles from the baselines.

Beyond the territorial seas of the North Sea, each coastal state is entitled to a continental shelf which is the natural extension of the land territory. This right does not depend on occupation or any express proclamation. The continental shelf comprises the sea-bed and the subsoil of the submarine areas up to the outer edge of the continental margin or to a distance of 200 nautical miles from the baseline, where the outer edge of the continental margin does not extend that far. Division of the continental shelf in the North Sea between the coastal states is a result of delimitation agreements concluded in the mid-sixties and early seventies. Later agreements complement or alter former

delimitation agreements as a result of the decision of the International Court of Justice in the North Sea Continental Shelf Case of 20 February 1969 (Germany vs. Denmark and the Netherlands). In the nineties, Belgium concluded delimitation agreements with France, the UK, and the Netherlands.

Under the 1982 Law of the Sea Convention, coastal states are entitled to an exclusive economic zone extending no further than 200 nautical miles from the baselines. In contrast to the continental shelf, an exclusive economic zone must be explicitly proclaimed or installed by the coastal state and includes, besides the sea-bed and its subsoil, the waters superjacent to the sea-bed. It is expected that the boundaries of the exclusive economic zones in the North Sea will coincide with the boundaries of the continental shelves. If all North Sea states proclaim an exclusive economic zone, there will be no high seas in the North Sea. So far Belgium (1999), France, Norway, Denmark, the Netherlands and Germany have proclaimed an exclusive economic zone in the North Sea. The UK has not formally proclaimed an exclusive economic zone but has developed legislation to act accordingly in those cases allowed by other international conventions (e.g., to exercise jurisdiction in matters of ship-generated pollution beyond the territorial sea).

In the late seventies the fishery zones of the North Sea were extended to 200 nautical miles, as requested by the Council of the European Community. The boundaries of the North Sea fishery zones are set by existing agreements as to the limits of the continental shelves.





Belgian maritime zones in the North Sea

Baseline

The Belgian maritime zones are measured from a normal baseline, which is the low-water line along the coast as indicated on official large-scale charts. The outermost permanent harbour extension of the port of Zeebrugge forms an integral part of the harbour and constitutes part of the coast. Here the baseline is a straight baseline between the two outermost points of the eastern and western outer harbour.

Territorial sea

The Belgian territorial sea extends 12 nautical miles from the baseline. The boundary of the Belgian territorial sea with France consists of a rhumb-line connecting the points expressed in the co-ordinates 02°32'37"E-51°05'37"N and 02°23'25"E-51°16'09"N (1990 Agreement). The boundary of the Belgian territorial sea with the Netherlands consists of an orthodromic line connecting the points expressed in the co-ordinates 03°21'52,5"E-51°22'25"N, 03°21'14"E-51°22'46"N, 03°17'47"E-51°27'00"N, 03°12'44"E-51°29'05"N and 03°04'53"E-51°33'06"N (1996 Agreement). Belgian legislation does not diverge from the principles of the international law of the sea. In the territorial sea Belgium has sovereignty extending to the air space over the territorial sea, its bed and subsoil. This sovereignty means that Belgium is allowed to adopt laws or regulations and punish infringements in respect of all or any of the following general topics: navigation, laying and protection of cables and pipelines, fisheries, prevention of pollution, conservation of living resources, exploitation of non-living resources, scientific research, customs, fiscal matters, immigration, and sanitary regulations. This sovereignty is limited by the customary right of innocent passage through the territorial sea for ships of all states. Passage has to be continuous and expeditious, except in cases of force majeure or distress. Passage is innocent so long as it is not prejudicial to the peace, good order, or security of the coastal state. The meaning of innocent passage is further elaborated in art. 19 of the 1982 Law of the Sea Convention. Belgian legislation may not hamper innocent passage or levy charges upon it. It is allowed, however, to charge for specific services rendered, such as rescue or pilotage services, but not in a manner that discriminates among ships of different foreign flags. Furthermore, Belgian laws may not affect the design, construction, manning, or equipment of foreign vessels unless they conform to generally accepted international standards, being those accepted within the Inter-

national Maritime Organization. All ships, whether in innocent passage or not, must comply with the law of the coastal state while in its territorial sea.

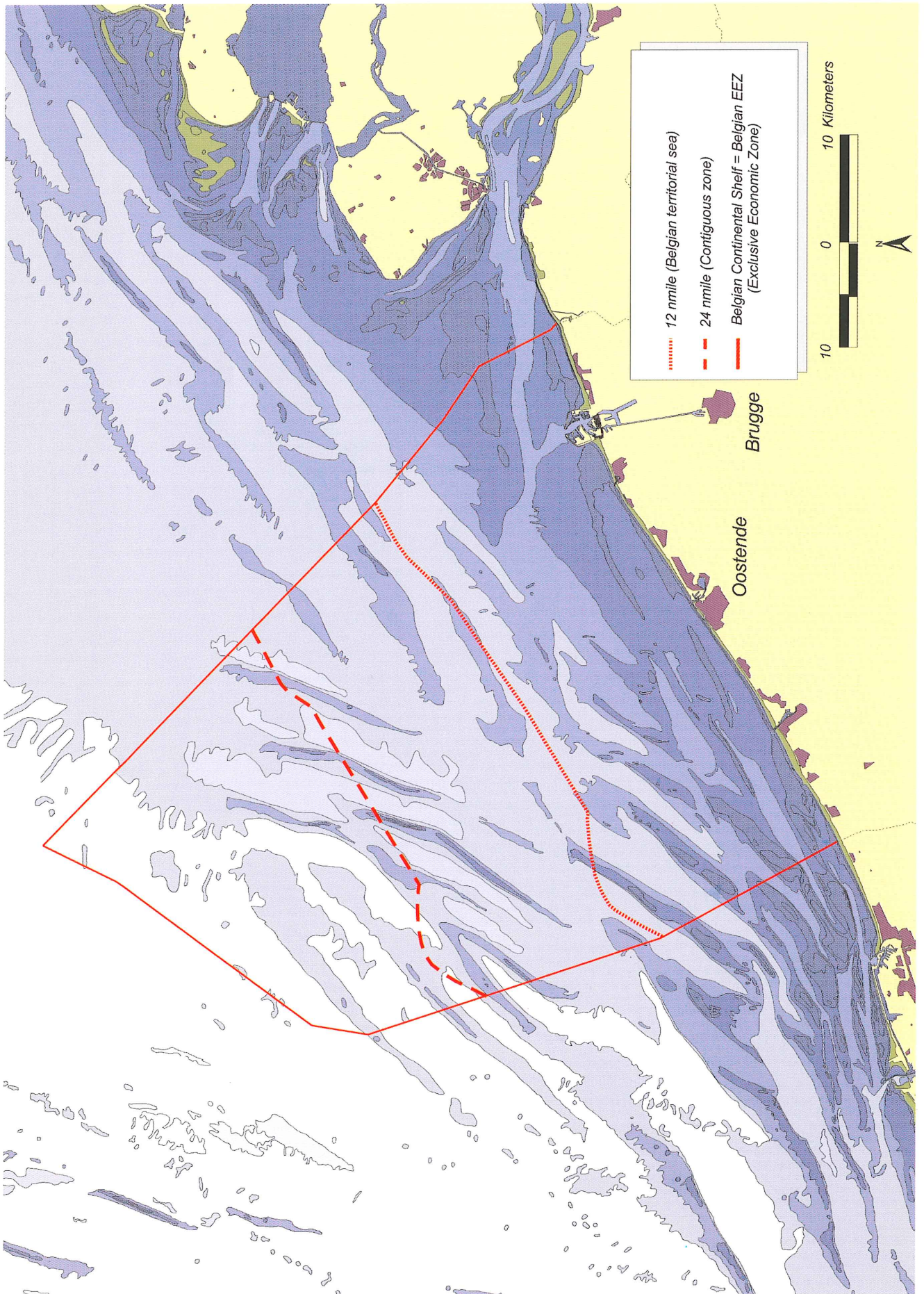
Contiguous zone

In the contiguous zone a coastal state may exercise the control necessary to prevent and punish infringements of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea. The Belgian customs zone of 10 km became redundant after the extension of the Belgian territorial sea to 12 nautical miles in 1987. The new Belgian Law on the Exclusive Economic Zone (EEZ) replaces this customs zone by a contiguous zone of 12 nautical miles beyond the territorial sea.

Continental shelf

The surface of the Belgian continental shelf is about 2,017 km² with a maximum seaward breadth of 47 nautical miles (87.06 km). The boundary of the Belgian continental shelf with France consists of a rhumb-line connecting the points expressed in the co-ordinates 02°23'25"E-51°16'09"N and 02°14'18"E-51°33'28"N (1990 Agreement). The boundary of the Belgian continental shelf with the UK consists of a rhumb line connecting the points expressed in the co-ordinates 02°14'18"E-51°33'28"N, 02°15'12"E-51°36'47"N and 02°28'54"E-51°48'18"N (1991 Agreement). The boundary of the Belgian territorial sea with the Netherlands consists of an orthodromic line connecting the points expressed in the co-ordinates 02°32'21,599"E-51°52'012"N and 03°04'53"E-51°33'06"N (1996 Agreement).

According to the Law of 13 June 1969 Concerning the Continental Shelf Belgium exercises over its continental shelf sovereign rights for the purpose of exploring and exploiting the mineral and other non-living resources of the sea-bed and subsoil; this also includes living organisms belonging to sedentary species. This means that no one may undertake these activities without express Belgian consent, which is given by means of a permit or concession. The Belgian Law of 20 January 1999 Concerning the Protection of the Marine Environment within Belgian Jurisdiction requires an environmental impact assessment for the exploitation of non-living resources on the continental shelf.



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2&3

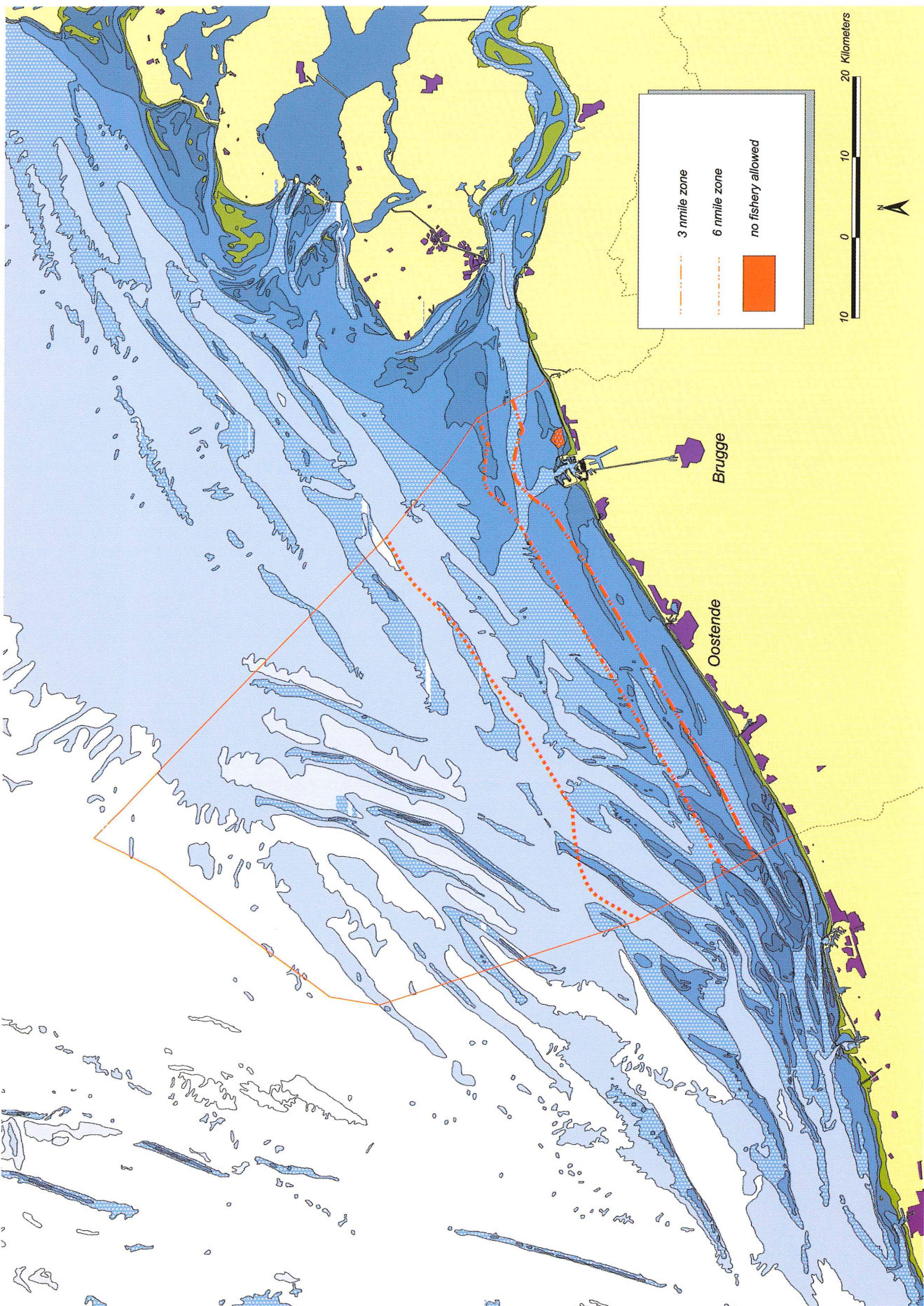
Belgian maritime zones in the North Sea

Exclusive economic zone

The new Belgian EEZ law of 22 April 1999 adheres to the principles laid down in the 1982 Law of the Sea Convention. In its exclusive economic zone a coastal state has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the sea-bed and of the sea-bed and its subsoil. A coastal state also has jurisdiction with regard to the establishment and use of artificial islands, installations, and structures, to scientific research, to the protection and preservation of the marine environment, with due regard to the rights and duties of other states. The latter rights and duties refer to the freedoms of navigation, overflight, and the laying of submarine cables and pipelines. Belgian EEZ legislation amends the Continental Shelf Law and the Belgian Fishery Laws, inter alia by : bringing the exploration and exploitation of sedentary species under the Belgian fishery laws; introducing new legislation proclaiming exclusive Belgian jurisdiction over artificial islands, installations, and structures; introducing consent and procedures to be followed when other states intend to conduct scientific marine research in the Belgian exclusive economic zone; introducing Belgian consent for the laying of cables and pipelines entering its territory or territorial sea or used in connection with exploitation of the continental shelf, operations of artificial islands, installations, and structures within Belgian jurisdiction. In other cases delineation of the course for the laying of cables and pipelines is subject to Belgian approval. Preservation and protection of the marine environment in Belgium's exclusive economic zone is regulated by the Law on the Protection of the Marine Environment within Belgian Jurisdiction.

Fishery zones

In 1978 Belgium installed a fishery zone, whose boundaries are adjusted by the law on the Belgian EEZ to coincide with the boundaries of the Belgian continental shelf. Fishing within the 12-nautical-mile zone is exclusively reserved for Belgian fishermen and, under certain conditions, also for French and Dutch fishermen. Outside the 12-nautical-mile zone, the general principle of free access applies. In the area between 3 and 12 nautical miles, Dutch fishermen are allowed to catch all species of fish and French fishermen are allowed to catch herring (EC Regulation 3760/92). The Treaty of the BENELUX Economical Union (1958) allows Dutch fishermen to fish within 3 nautical miles. A Belgian-French Agreement (1975) allows French fishermen to catch herring and sprat in the Belgian territorial sea, between 3 and 6 nautical miles for vessels whose gross tonnage does not exceed 60 or whose engines do not exceed 400 horse power, and within the 3 nautical miles zone for vessels whose gross tonnage does not exceed 35 or whose engines do not exceed 250 horse power. Fishing is totally prohibited on the Paardenmarkt, as indicated on the official charts, because war munitions have been dumped there. Fisheries are entirely within the competence of the European Union, which determines on a yearly basis the total allowable catch (TAC) for certain important North Sea species and sets technical standards for fishing nets (mesh size) and the minimum size or weight of fish landed. Each TAC is divided up among the Member states in the form of quotas. In 1995 the European Union introduced a new management instrument called "the fishing effort regime", which establishes a link between captures (fish) and fishing capacity (boats). Management of the fishing effort is done by fishery, defined by fishing gear used and species fished.



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Sand and gravel extraction

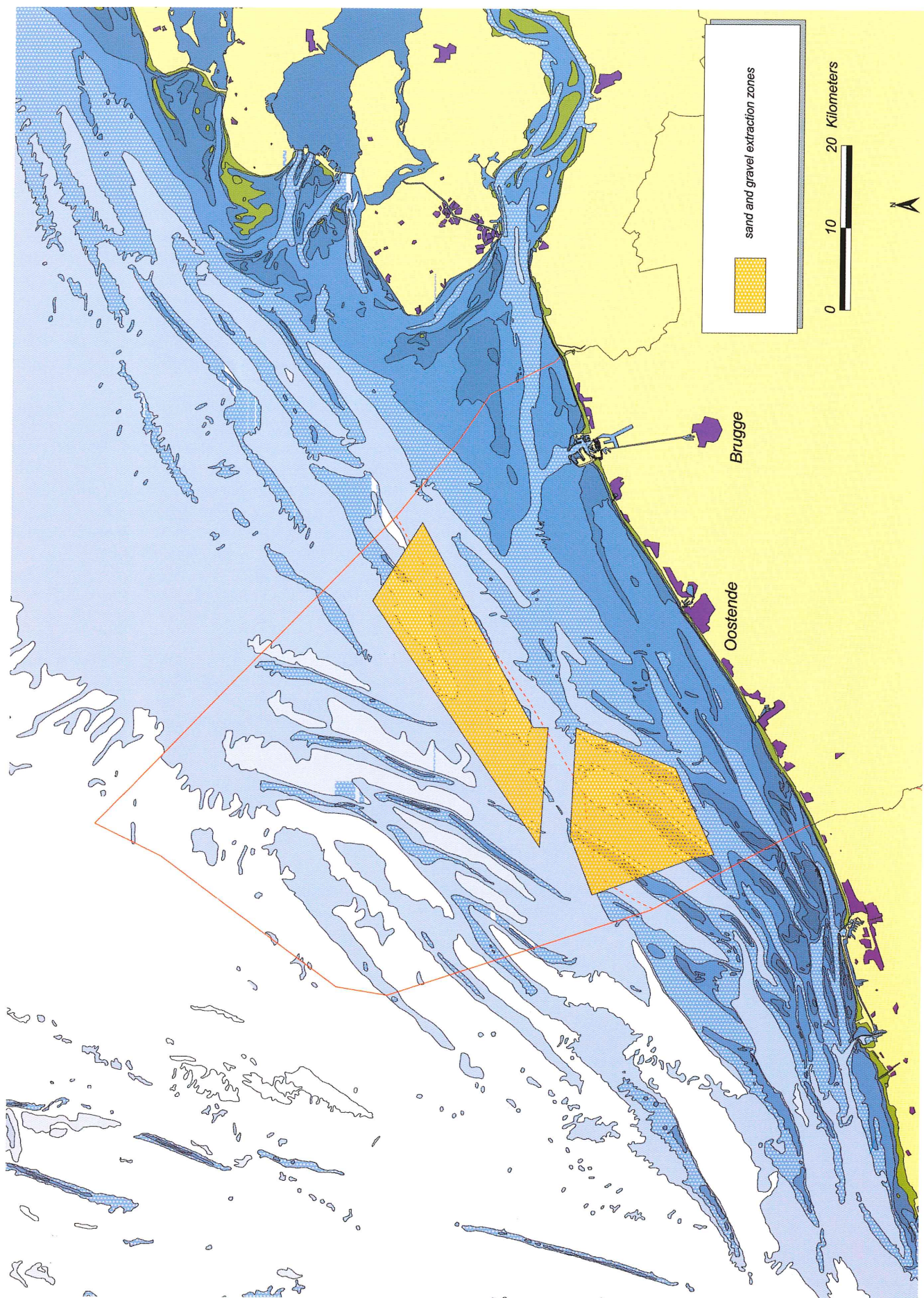
In the Belgian maritime areas, sand and gravel extraction takes place in two specific zones, as shown on the map. Extraction is done mainly on several sand banks facing the Belgian coast: for instance, the Thorntonbank and Gootebank as parts of the first extraction zone and the Kwintebank, Buiten Ratel, and Oost Dijck as parts of the second. The second zone is used for exploitation by private companies, the first is reserved for extraction on behalf of the Ministry of Public Works. The yearly amount of extracted material is around 1.5 million m³, extracted mainly from the Kwintebank. The sand and gravel extracted are used mainly for building, beach suppletion, and land reclamation (e.g., expansion of the port of Zeebrugge). In 1997 an exceptionally large amount was extracted (about 3.8 million m³) and used for laying a new pipeline on the continental shelf.

Sand and gravel exploitation in Belgian maritime areas is regulated by the Law of 13 June 1969 Concerning the Continental Shelf. Exploration and exploitation of the continental shelf require a concession, granted by the federal government. Further rules and requirements for concessions are laid down in two royal decrees. For extraction of sand for port or coastal works by or on behalf of the government, only notification and no concession is required. Concessions for exploration and exploitation can be granted only in the two specific zones defined in the Royal Decree of 16 May 1977. An exception can be made for concessions granted for exploration for scientific purposes or matters of national importance. A concession can be granted for a maximum period of 30 years. During exploration and exploitation, all measures must be taken in order to prevent pollution.

Under the agreement between Belgium and the Netherlands on the delimitation of the continental shelf, a small part of the Dutch continental shelf will become Belgian continental shelf. The Dutch concessions for sand exploitation will be taken over by Belgium (by the end of 1998). By the end of 1999 the existing concession areas will be redesigned. New borders will be drawn and the previous Dutch concession area will be formally included.

Concessions are granted by the Federal Ministry of Economic Affairs, which also controls the activities themselves. To provide more information on the exact location of the extractions, an automatic registration system is used on the ships (the so-called black box). The ecological effects of sand and gravel extraction on the marine environment are monitored by the Management Unit of the Mathematical Model of the North Sea and the Department of Fisheries. The concession holder is required to pay an amount towards research costs. The concession may be suspended if research results show negative effects on the marine environment.

In the Law on the Belgian Exclusive Economic Zone, the regime applicable to exploration and exploitation of the non-living resources of the continental shelf is also made applicable to the sea-bed and subsoil of the territorial sea. According to the terms of the Law on Protection of the Belgian Marine Environment, an environmental impact report is required, to be included in the concession application. A continuous environmental impact assessment will assess the effects of sand and gravel extractions on the marine environment.



MAP

5 Dredging

This map shows the areas where dredging takes place and the sites where the dredged material is dumped into the sea.

Dredging

In order to maintain accessibility to the Belgian sea ports, dredging is required along the Belgian coast, in the estuary of the Western Scheldt, and in the Belgian sea ports. Dredging activities are of two types: dredging required for the initial construction of ports and sea approaches and maintenance dredging to maintain the required depth of existing infrastructures. Yearly more than 20 million m³ material is dredged. As a result of the agreement between Belgium and the Netherlands to deepen the Western Scheldt, a major increase in dredging activities is to be expected.

Regulation of dredging activities is rather limited. Internationally, there is practically no regulation. If the dredged material is used as a resource (for instance sand for beach suppletion), dredging can be regarded as a form of exploitation of the sea-bed (cf. map 4). As dredging can affect the marine environment, the Oslo Commission has enacted guidelines for dumping dredged material (OSCOM Guidelines for the Management of Dredged Material). These guidelines also include best environmental practices for dredging itself (including the need to reduce dredging).

In Belgium under the State Reform Law, the Flemish Region is competent for dredging activities. Dredging activities are commissioned by the Water- and Seaways Administration of the Ministry of the Flemish Community.

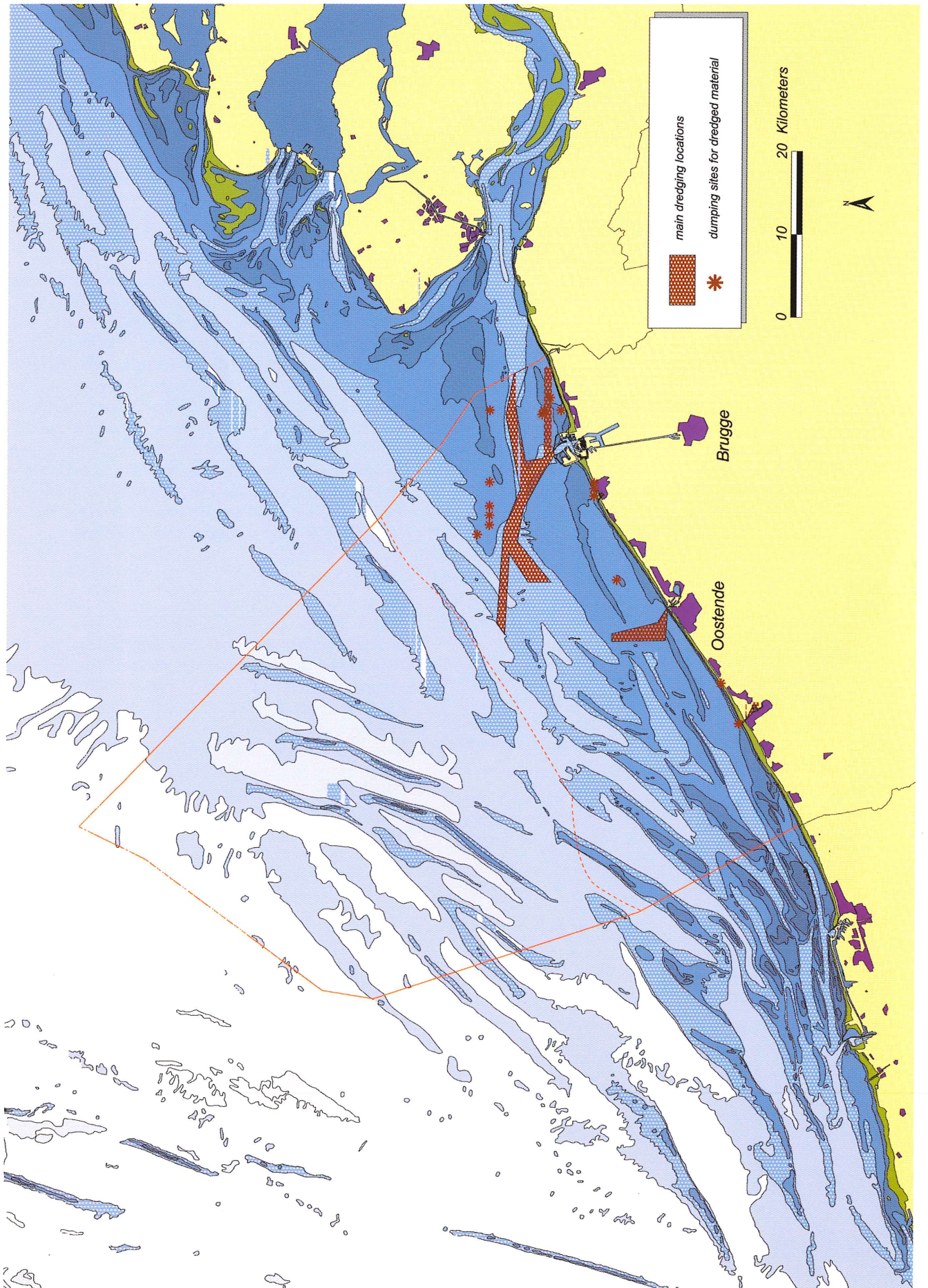
Dumping of dredged material

Most of the dredged material is dumped back into the sea or in the Western Scheldt. Dredged material from the sea is usually no real source of pollution. This material consists mostly of sand and sludge, which is mainly being replaced. Dumping of dredged material from the ports is a problem, as this material is usually heavily polluted. Dumping of dredged material in the North Sea by Belgium averages of 20 million m³ each year.

Internationally dumping of dredged material is regulated by the OSPAR Guidelines for the Management of Dredged Material. In the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR, Paris, 1992), dumping of waste is prohibited in principle, except for certain categories such as dredged material. No such material can be dumped without a permit or regulation by the competent authorities. The permit or regulation must be in accordance with the guidelines and the procedures adopted by the OSPAR Commission.

In Belgium dredging activities are commissioned by the Flemish government. Monitoring of the effects of dumped dredged material is done, however, by the federal government. In 1990 the federal and Flemish governments concluded a co-operation agreement on preventing adverse environmental effects on the marine environment due to dumping of dredged material. This co-operation agreement constitutes the basis for applying the OSCOM Guidelines on the Management of Dredged Material.

The Law on the Protection of the Belgian Marine Environment implements the Paris Convention and allows dumping of dredged material into the sea, subject to a permit and an environmental impact assessment (EIA). The effects of dredging will have to be monitored as part of a continuous environmental impact assessment after dumping of dredged material into the sea.



M A P

6 Industrial waste sites, dumping site for war munition and military exercises

This map shows the former dumping site for industrial waste, the dumping site for war munition, and the sites where military exercises are held.

Former dumping site for industrial waste

From the sixties onward the North Sea was used as a dumping site for industrial waste. In Belgium this waste was produced mainly by the titanium dioxide industry. In accordance with the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo, 1972), the Law of 1978 required an authorisation or permit for dumping industrial waste. As a result of EC regulations on waste from the titanium dioxide industry and the decision made at the second North Sea Ministerial Conference to ban dumping of industrial waste, dumping of Belgian industrial waste was banned by the end of 1989.

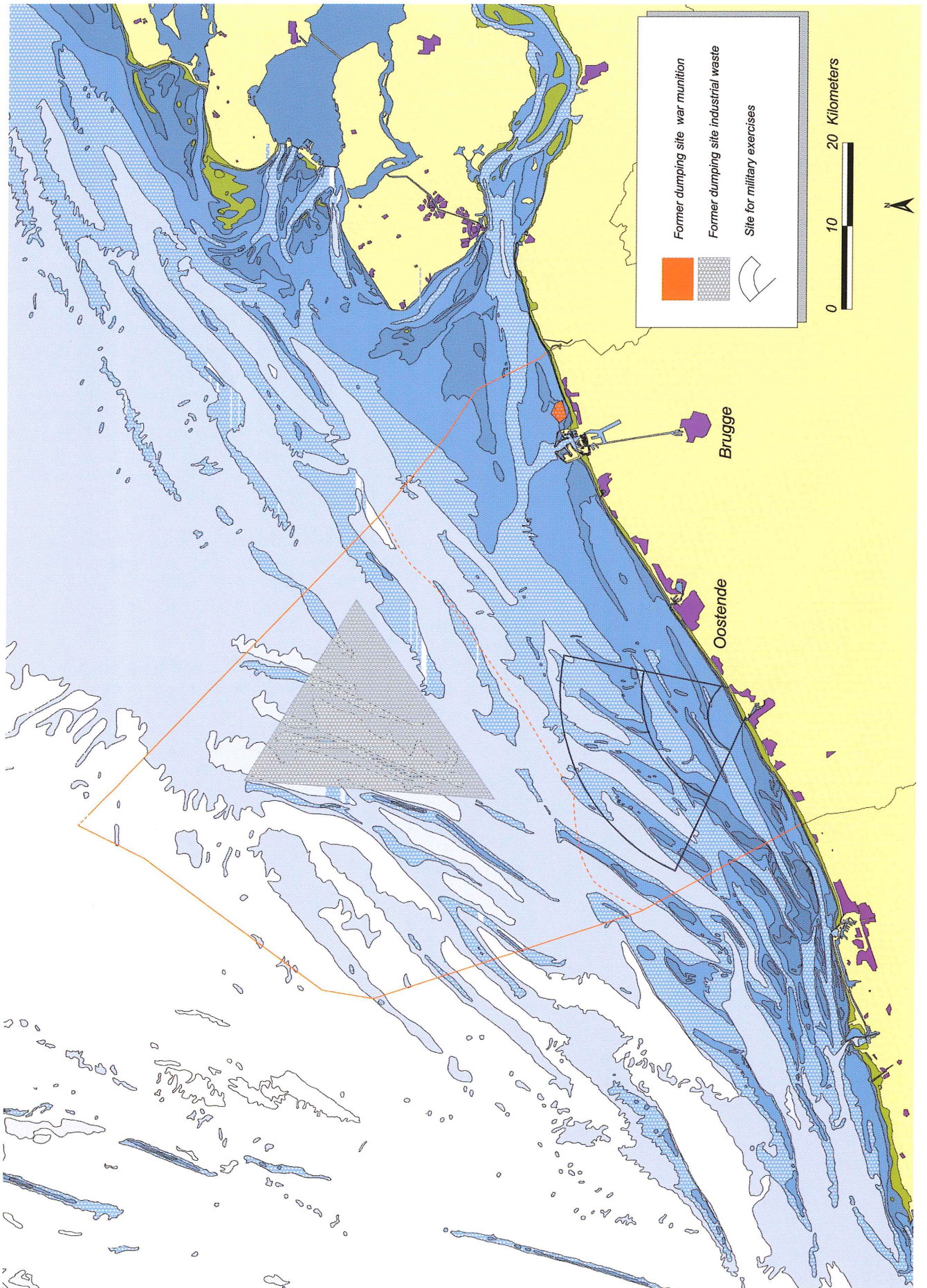
In the Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (1992), dumping of industrial waste is no longer allowed. The Law on the Protection of the Belgian Marine Environment includes this prohibition.

Former dumping site for war munition

After World War I the Belgian army dumped German war munition on the sand plate called the "Paardenmarkt", about 1 km off the Belgian coast near Duinbergen. The amount is estimated at 35,000 tons of munitions, of which 100 to 500 tons are probably toxic or can cause toxic effects under certain conditions. On hydrographic charts of the Belgian coast, the site is indicated as a zone where fishing and anchorage are prohibited. A large part of the munitions are covered by sediment. As the short-term pollution risk is rather small and risk to humans of bringing the munitions back on land is high, the Belgian government has so far decided to leave the munitions untouched.

Site for military exercises

Besides military exercises at sea conducted by the Belgian navy and NATO partners, there are also military shooting exercises directed seawards from the land. These exercises are held off the beach area located at Nieuwpoort-Lombardsijde. The zones where these exercises are held are mentioned on hydrographic charts of the Belgian coast. They are divided into three shooting sectors. During exercises all vessels are required to avoid coming into the zone, and if a vessel is in the zone, it is required to leave it as soon as possible. Periods in which shooting exercises are to be held are announced in the Messages for Seafarers. Which sector will be used, depends on the kind of exercises that are being held.



MAP

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Main shipping routes and vessel traffic separation schemes along the Belgian coast

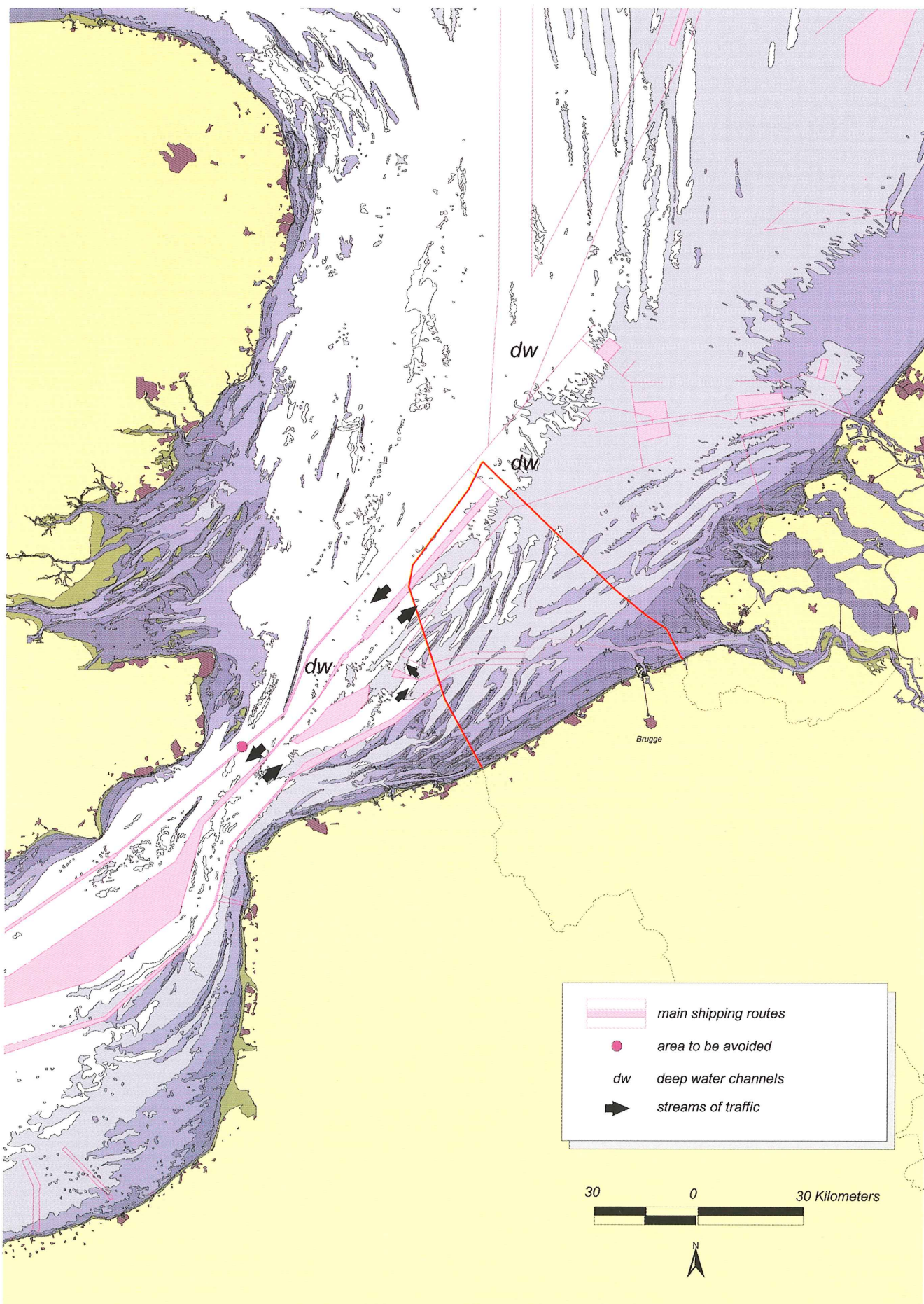
Every year more than 420,000 route-bound ship movements can be registered in the North Sea, excluding fishery vessels, marine vessels, and recreational vessels. The majority of these movements take place in the southern part of the North Sea, making this part of the North Sea one of the most heavily navigated areas in the world. This area is very susceptible to collisions and groundings. In order to prevent and reduce the incidence of head-on encounters, the danger of collisions, and the risk of groundings, traffic separation schemes, other routeing measures, and traffic rules have been worked out in conventions (e.g., the Convention on the International Regulations for Preventing Collisions at Sea, 1972) and within the International Maritime Organization.

The main shipping route along the Belgian coast is an east-west traffic route for ships bound to or coming from European ports along the southern part of the North Sea, entering and leaving the North Sea through the English Channel. This route is part of a traffic separation scheme aimed at separating opposing streams of traffic by the establishment of traffic lanes and

other appropriate measures. Only a small part of this North Sea traffic separation scheme is situated in the waters above the northern part of the Belgian continental shelf. At West Hinder there is a southbound traffic separation scheme, connecting with the main traffic separation scheme in the North Sea and used by ships calling at Belgian ports and ports in the Western Scheldt. The West Hinder separation scheme has a westbound and a southbound traffic lane and an anchorage area in the north. The West Hinder traffic separation scheme begins at the end of the Strait of Dover, facing Dunkerque, and it ends in the Belgian territorial sea. The West Hinder separation scheme is used daily by 50 to 100 ships.

Besides these separation schemes there are various other shipping routes for ships not bound by a separate traffic lane. Shipping traffic between Belgian ports and the UK crosses daily the main traffic separation scheme.

Source: International Maritime Organization, *Ships' Routeing*, London, IMO, Sixth Edition, 1993.



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Operational ship-borne pollution (1991-1995) in the Belgian part of the North Sea

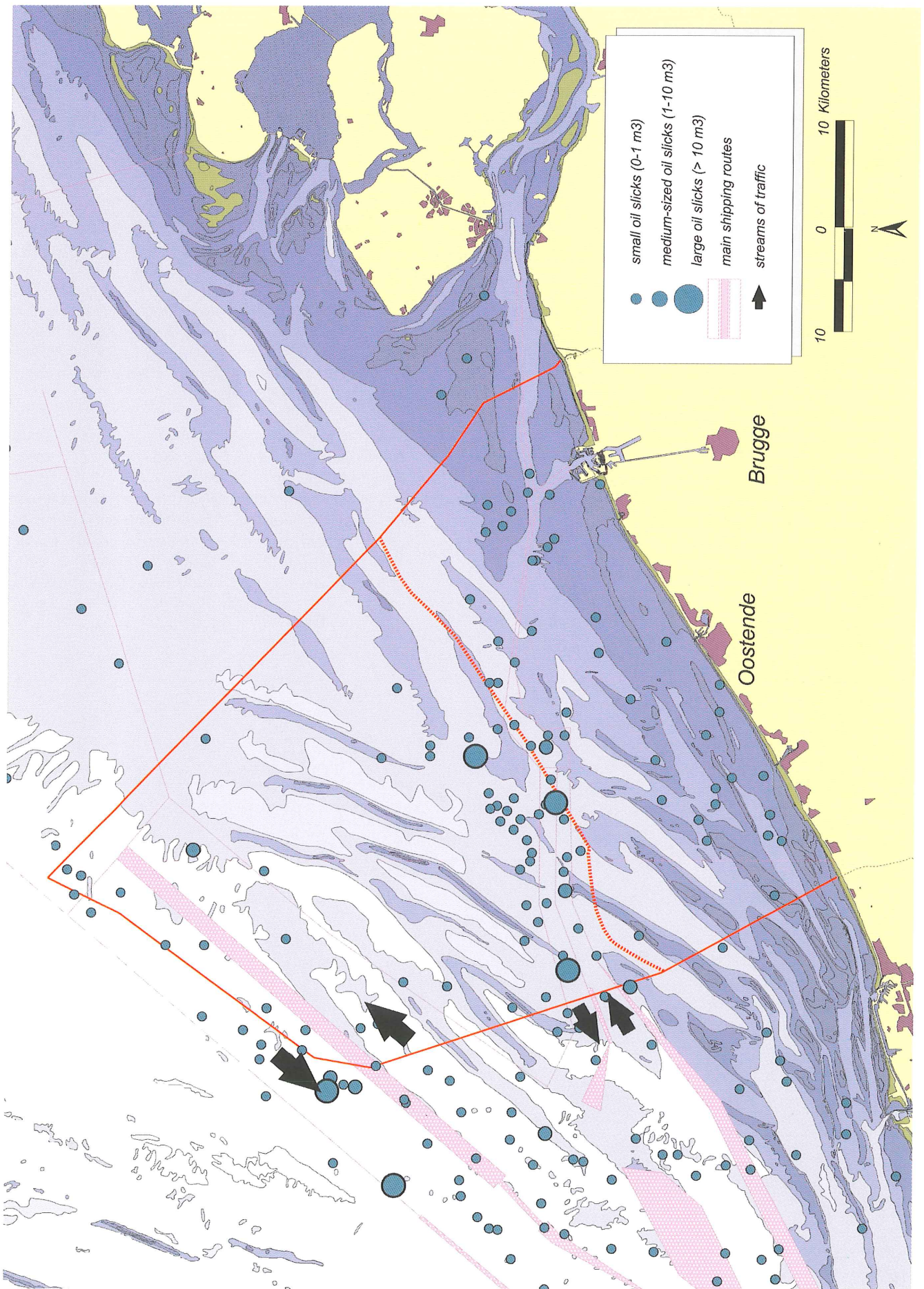
The International Convention for the Prevention of Pollution from Ships (1973), as modified by the 1978 Protocol pertaining thereto and amended from time to time (MARPOL 73/78), contains special construction and equipment regulations for ships in order to prevent accidental pollution and discharges at sea. MARPOL 73/78 deals with pollution by oil (Annex I), noxious liquid substances carried in bulk (Annex II), harmful substances carried in packaged form (Annex III), sewage (Annex IV), and garbage (Annex V). MARPOL 73/78 imposes on parties a duty to establish reception facilities in their ports, allowing ships to discharge on land those residues which are forbidden to be discharged into the sea. The discharge requirements for oil, noxious liquid substances, and garbage differ from region to region, depending on whether the region is a special area or not. The North Sea is a special area for discharges of garbage (since 18 February 1991) and oil (since 1 February 1999). It is prohibited to discharge oil or oily mixtures into the North Sea from any oil tanker or other ship, except when the oil content of the undiluted effluent does not exceed 15 parts per million and except for the discharge of clean or segregated ballast by oil tankers. In the North Sea the disposal of garbage, such as all plastics, paper products, rags, glass, metal, bottles, crockery, dunnage, lining, and packing materials, is prohibited. Disposal of food wastes is prohibited within 12 nautical miles of the nearest land. Discharge of residues containing noxious liquid substances (chemicals) is prohibited within 12 nautical miles of the nearest land.

The Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and other Harmful Substances (BONN - 1983, as amended) divides the North Sea area into zones of responsibility or control, without prejudice to coastal state jurisdictions or to the maritime boundaries of the North Sea states in compliance

with the Law of the Sea Convention (cf. Map 1). When within a country's zone the presence of oil or other harmful substances pollutes or threatens to pollute the sea and poses a grave and imminent danger to the coast or related interests of one or more contracting parties, that country must make the necessary assessments of the state of the casualty, or of the type, quantity, and behaviour of the pollution. The Belgian zone of responsibility is a joint zone with France and the United Kingdom, situated between 51°32'N and 51°06' N. Since 1989, the zones of responsibility are also zones of control for the purpose of aerial surveillance by national flights to detect and combat pollution and to prevent MARPOL 73/78 discharge violations. Besides national flights, the parties co-operate in regional flights, joint flights, etc. beyond the limits of the national control zones.

Since 1991 Belgian aerial surveillance is organised by the Management Unit of the Mathematical Models of the North Sea (MUMM) in co-operation with the Ministry of Defence. Belgian aerial surveillance has two main tasks: (1) repression of illegal discharges into the sea (operational pollution), and (2) assistance to units involved in combating pollution at sea (accidental pollution). This map shows the results of five years of aerial surveillance (1991-1995) in the Belgian control zone, according to the Bonn Agreement. On this map, illegal operational oil pollution from ships is indicated according to the estimated volume of the discharges. Most of the discharges took place in or near the shipping routes along the coast.

Source: R. Schallier, L. Lahousse & T.G. Jacques, Toezicht vanuit de lucht: Zeeverontreiniging door schepen in de Belgische Belangenzone van de Noordzee - Activiteitenrapport 1991-1995, Brussel, Beheerseenheid Mathematisch Model Noordzee en Schelde Estuarium (BMM-MUMM), 1996, 51 + bijlagen.



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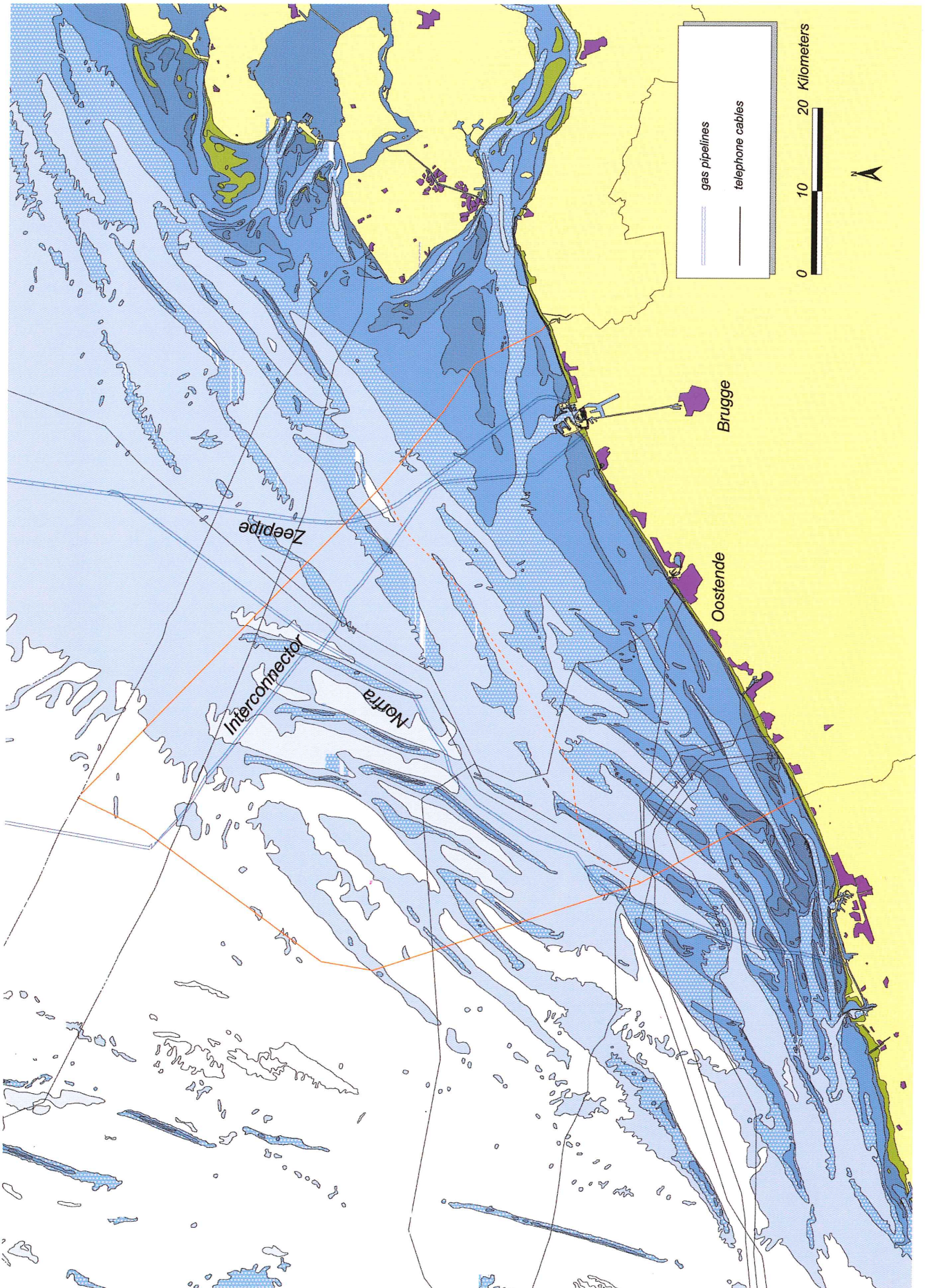
9 Cables and pipelines in the maritime area within Belgian jurisdiction

On this map we can see three submarine gas pipelines situated partly on the Belgian continental shelf.

The first pipeline, called «Zeepipe», has been in operation since 1 October 1993 and joins a pipeline from the Sleipner area on the Norwegian continental shelf with the Distrigaz terminal in the port of Zeebrugge. The pipeline is partly situated on the Belgian continental shelf. This pipeline is operated by Statoil and carries roughly 13 billion cubic metres of gas per year. The line to Zeebrugge is 814 kilometres long. Any residual liquids and particles are stripped out at the Zeebrugge terminal, where the gas is also metered and pressure-regulated for onward delivery through the Belgian transport system.

The second pipeline, called «Interconnector», between Bacton on the South coast of England and Zeebrugge, became operational in October 1998. This gas transmission line is 215 kilometres long and used to transport gas from the Leman gas field. The Leman gas field was discovered in 1966 and is the biggest gas field in the southern North Sea, measuring 13 km by 29 km. A 58-kilometre pipeline carries the gas to be processed at Bacton on the Norfolk coast.

The third pipeline situated partly on the Belgian continental shelf is called «NorFra» and is a 840-kilometre-long trunkline from the Draupner E platform on the Norwegian continental shelf to the port of Dunkerque in France. The pipeline is being constructed partly by Statoil to provide additional transport capacity to continental Europe. The line became operational in 1998 and transports 40 million cubic metres of gas per day.



Important bird areas, Ramsar site and proposed Special Conservation Area

The identification of important bird areas in the Belgian maritime waters is based on original results from regular aerial, ship- and landbased surveys in the period 1992-1998, carried out by the Institute of Nature Conservation (Seys *et al.*, in prep). From the 140 bird species recorded, 10 species were retained as key-species. To be selected as a key-species, it should occur regularly at least part of the year in important numbers (meet the 1% Ramsar criterion: Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971), use the Belgian marine waters in important concentrations as feeding/roosting site and meet criteria of rarity/vulnerability as indicated by international conventions (i.e. included in either Annex I of the EU Wild Birds Directive 79/409/EEC, 91/244/EEC, 94/24/EEC or in Appendices I/II of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, or Bonn Convention on the Conservation of Migratory Species of Wild Animals).

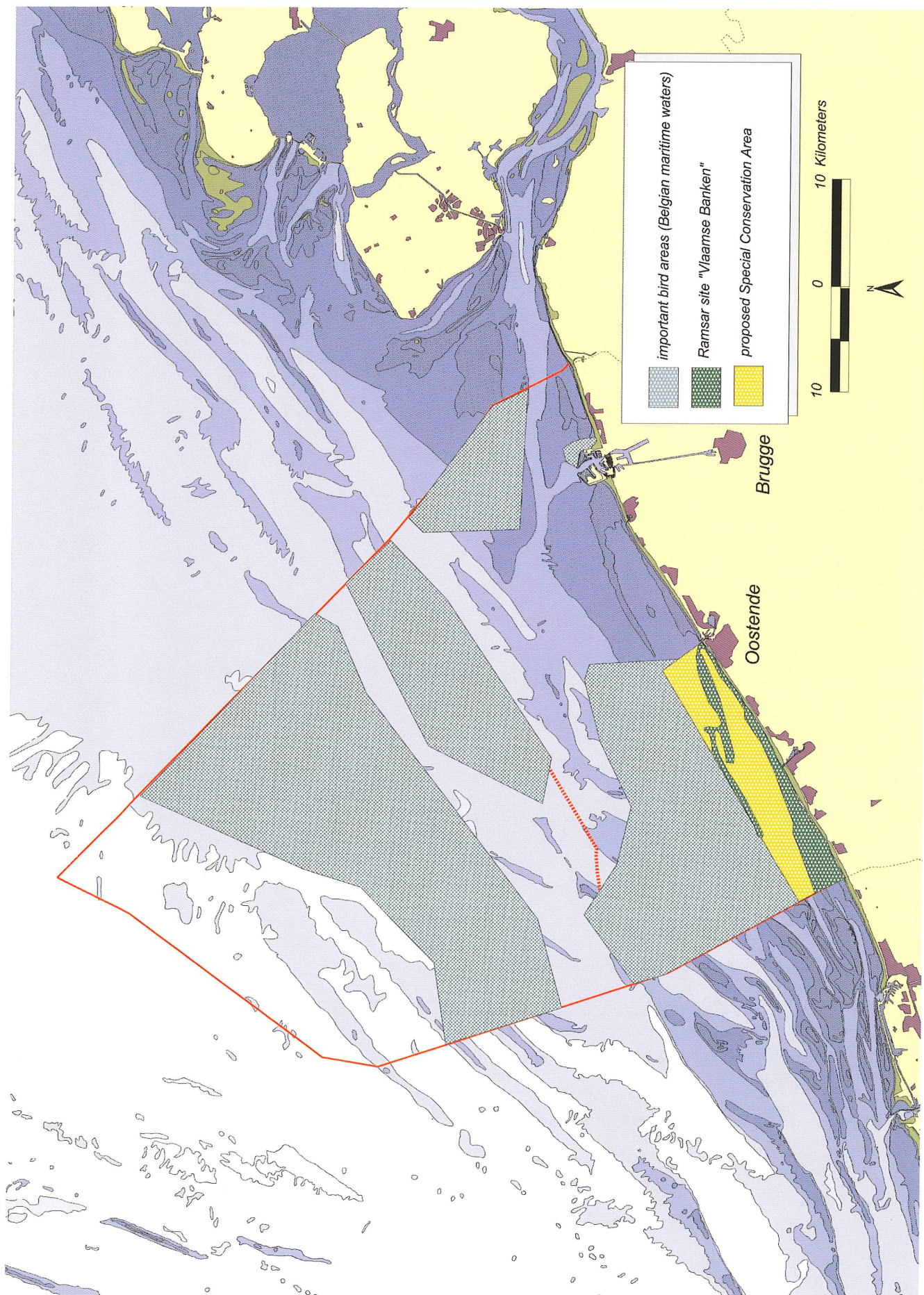
During wintertime and in the migration periods (spring/autumn) Little Gulls (*Larus minutus*) build up remarkable concentrations at our coast. Estimated total numbers can be as high as 1,800-3,700 individuals or 2-5% of the total European population. Great-Crested Grebes (*Podiceps cristatus*) form large winter concentrations (max.: 3,500 ind. or 2.4% of the NW-European population) on the coastal banks, often near to large flocks of Common Scoters (*Melanitta nigra*). The latter regularly attained the 1% Ramsar criterion in the past, but due to a revision of the total population size, numbers in Belgian marine waters no longer do and the highest count hardly equals the current 1% norm of 16,000 ind. During summer, large numbers of Sandwich Tern (*Sterna sandvicensis*), Common Tern (*S.hirundo*) and Little Tern (*S.albifrons*) use the Belgian coastal waters as feeding grounds to raise young in the outer harbour of Zeebrugge. The maximal numbers of breeding pairs here (Little Tern: ca. 300 pairs, Common Tern: ca. 2,000 pairs, Sandwich Tern: ca. 1,600 pairs) correspond to ca. 2% of the Western European population for all three species. Although the Sandwich Tern population in Zeebrugge has declined dramatically the last few years, the potentials for this species in terms of feeding opportunities are maintained, and it is believed that with the future creation of new suitable breeding grounds and an appropriate management of the colony, the Belgian coastal area will remain a key-area for this species. On top of the six Ramsar species mentioned above, one more species - the Red-throated Diver (*Gavia stellata*) - has a maximal estimated population

meeting the 1% criterion. Of this oil-and disturbance sensitive species, up to 1.8% can be found within the Belgian coastal waters in wintertime. Finally, three fish-eating species were selected, never exceeding the Ramsar norm but occurring in high concentrations and characteristic for shallow sandbank ecosystems (cf. Habitats Directive: Council Directive 92/43/EEC on the conservation of natural habitats of wild fauna and flora). The Guillemot (*Uria aalge*) and Razorbill (*Alca torda*) are particularly abundant in winter on most sandbanks except for the coastal banks, the Gannet (*Morus bassanus*) can form large feeding groups in the area in autumn.

The five 'important bird areas' on map 10 indicate strongholds for the ten species mentioned above. The map does not reveal any ranking of these five areas, although generally the areas closer to the coast are more important for most key-species. Zeebrugge and its immediate vicinity (including the 'Baai van Heist' nature reserve) are essential to the conservation of the three tern species during the breeding season (April-August). The shallow sandbank area from Oostende tot the French-Belgian border holds important winter concentrations of Great-Crested Grebe and Common Scoter (coastal banks), the area more off-shore (Vlaamse Banken) is a key-site for wintering Little Gull, Red-throated Diver, Razorbill and Guillemot. In wintertime the same species assemblage is found concentrated on Hinder- and Zeelandbanken as well. Divers and Great-Crested Grebes often occur in substantial numbers on the 'Vlakte van de Raan', a shallow situated in the mouth of the Westerschelde.

Direct conflicts with other functions can arise where shipping activities or military exercises lead to disturbance of sensitive species (divers, scoters, ...) on their wintering grounds. Oil pollution is still a major concern for the protection of seabird populations, and the presence of intensively used shipping lanes in the immediate vicinity is a constant threat to many species. Indirectly, dredging activities, sand extraction, (shell) fishing or coastal defence works can be detrimental to birds through depletion/decimation of their food resources.

So far only the sandbank area from Oostende to the French-Belgian border, extending 3 nautic miles from the baseline and shallower than -6 m MLLWS has been designated as a Belgian Marine Wetland of International Importance under the Ramsar Convention in



1984 (the 'Vlaamse Banken', 1,900 ha). No specific nature conservation measures have been taken so far for this Ramsar site. An area of 17,000 ha, comprising the entire existing Ramsar 'Vlaamse Banken' site, has been proposed to the European Commission to be considered as a Special Conservation Area under the EC Habitats Directive. The Law on the Protection of the Belgian Marine Environment includes the option to designate marine protected areas (marine nature reserves) and take appropriate nature conservation measures, necessary for the protection of these areas. The law also provides a basis for taking specific protection measures in favour of species and already contains a prohibition to hunt birds and marine mammals.

Sources:

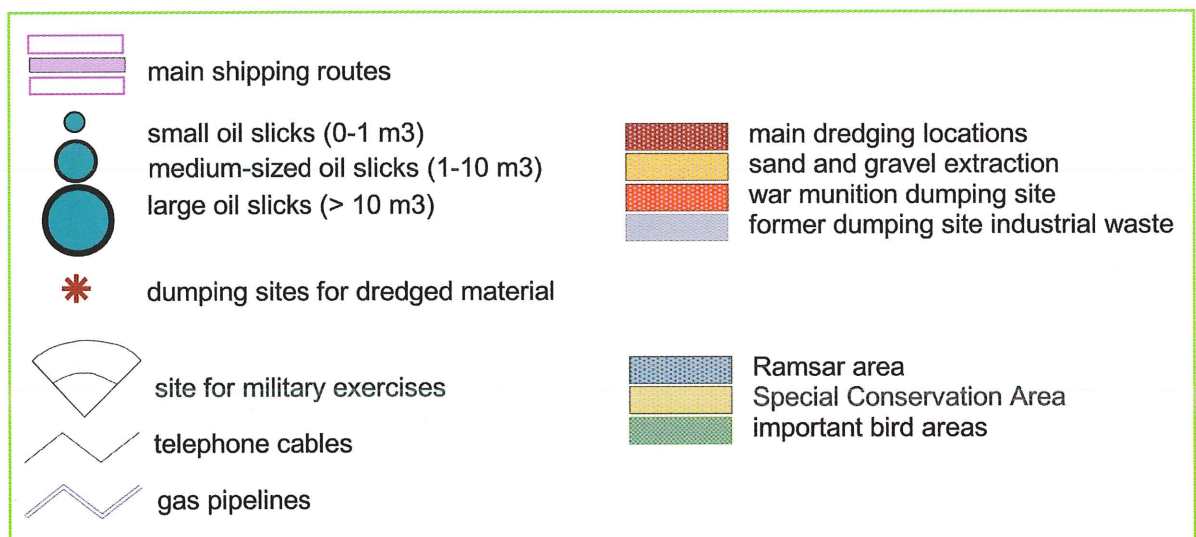
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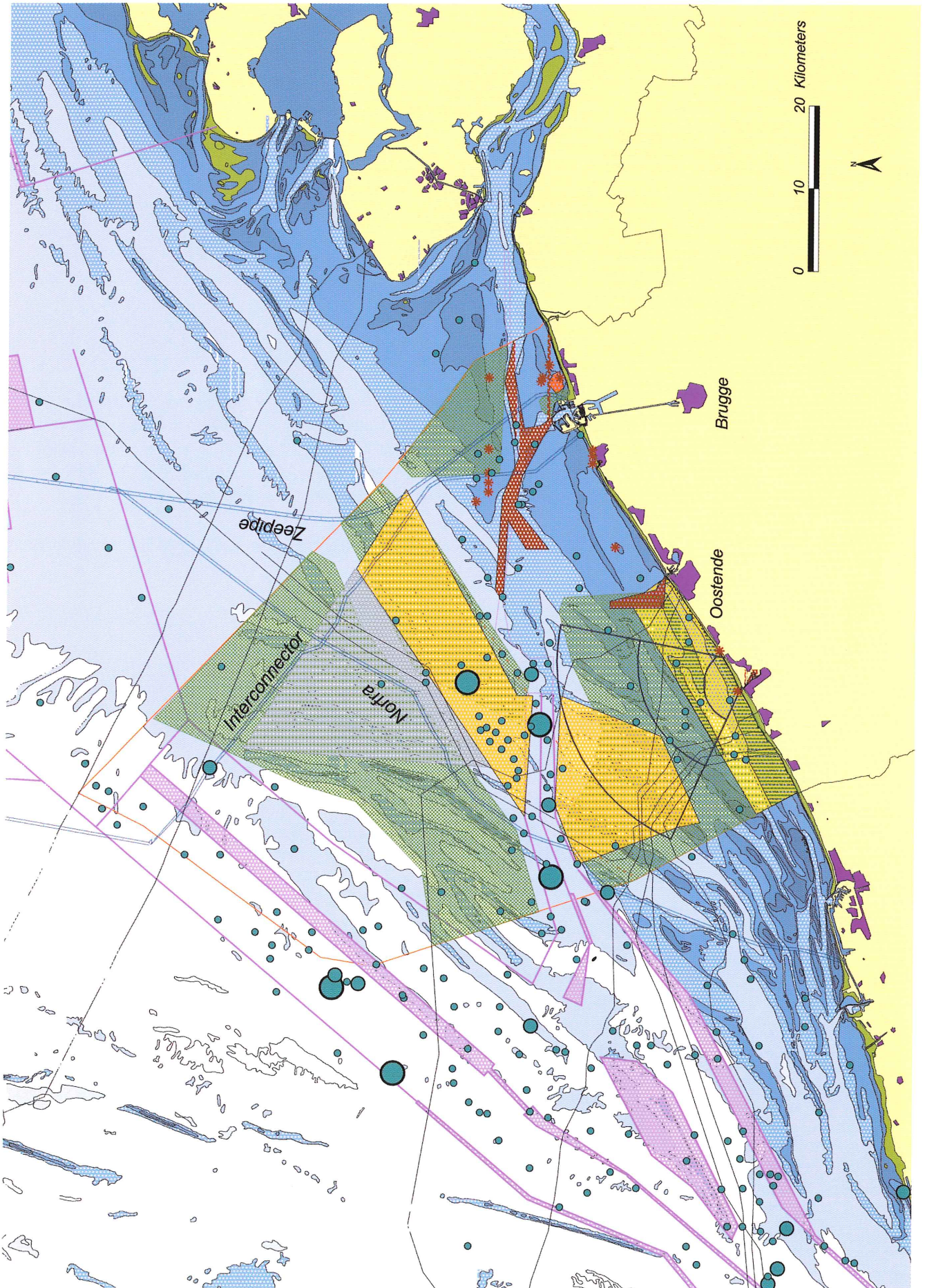
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11 Different user functions of the Belgian maritime zones

This map combines all the information given on the previous maps. For the explanation of the different uses we can refer to the accompanying texts. This map allows us to see which uses and natural values could

possibly conflict with one another. It can be a useful tool for the management of the Belgian marine area as it could form the basis to see if and where certain adjustments to the different uses are necessary.





Annex

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