

Photo: Oliver Bergold. Boarded helicopter and navy ship.

Wadden Sea Quality Status Report

Military activities

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1. Introduction

The military activities in the Wadden Sea Area and adjacent areas involve exercise and shooting ranges for ground forces and aircraft, testing areas for military equipment, low altitude flight and air target areas for military aircraft, and associated flights of aircraft and helicopters.

The main centre of the activities is situated in the western Dutch section of the Wadden Sea Area (Figure 1). The 2009 QSR stated that, in general, military activities and exercise areas have been reduced during the last two decades in the whole area. Since then, no major new developments have been reported.

Also part of this report is a short overview of known historical ammunition dumping sites in the Wadden Sea.



Figure 1. Military activities in the Wadden Sea Area.

2. Status and trends

Military exercise areas

The Netherlands

There are two military exercise areas in the Netherlands, the “Vliehors” and the “Mokbaai”. Both are partly within the designated World Heritage site.

The regulations for military activities in the Netherlands are laid down in the spatial policy document ‘Structuurvisie Infrastructuur en Ruimte” (or SVIR) from 2012 and the accompanying legislation “Besluit

Algemene Regels Ruimtelijke Ordening". The Structuurvisie Derde Nota Waddenzee, January 2007) contains the policy with regard to military activities for ten years and several decisions have been taken to reduce effects on the environment. The above mentioned SVIR of 2012 refers to the Structuurvisie Waddenzee as the policy document in force. The general minimum flight height was raised from 300 to 450 m (with an exception for military helicopters and the approach of the shooting range "Vliehors") and the low-altitude flight route was closed.

Vliehors

In use since 1960, "Vliehors" is a shooting range for NATO-military aircraft on a large sandbank on the west side of the island of Vlieland, partly in the designated area. It is generally used on work days as firing range and rockets and bomb dropping zone. Explosive bombs are only used outside the breeding season. On average, the area is used on 180 days a year for practices with bombs, rockets and gunning from fighter planes and about 3,000 aircraft movements are registered annually. The latter is now subject to an assessment on the possible effects on the natural values as requirement for the Nature Conservation Act licensing procedure.

The security zone of the Vliehors shooting range is located north of the island and off the coast in the Wadden Sea. The danger zone stretches out primarily into the Wadden Sea to a width of 12 km and has a total surface area of 105 km^2. The target area, including the standing points for shooting, covers a surface area of 1.5 km^2.

In order to limit the disturbance, explosive bombs are not being dropped in the period from 15 April to 1 September. Furthermore, the flight route is situated off the coast to keep the disturbance on the neighboring island Texel low.

Mokbaai

"Mokbaai" has been an amphibious exercise ground since 1917, with a military barrack and 100 permanently stationed personnel. Annually, about 50 exercises involving zodiacs, landing crafts and helicopters of the naval forces are executed, confined to work days. The breeding and moulting periods of birds are integrated into the exercise schedule. Further, specific nature-respecting rules of conduct have to be followed during the exercises.

Mokbaai is part of a bigger military exercise area (Joost Dourlinkazerne), which contains a part of the "Hors" on Texel as well. Both areas have been assessed by the Natura 2000 criteria and have been assigned accordingly. In the light of the development of the required management plans for Natura 2000 areas, investigations are currently made to all the activities, including the possible significant effects on the natural values. The results as well as former investigations indicate that the presence of the military zone has no significant negative effects on the natural values.

Areas partly inside or adjacent to the Wadden Sea Area

Zeefront consists of relatively small shooting exercise ranges near Den Helder outside the Wadden Sea Area. A part of the security zone is located within the Wadden Sea Area.

Breezanddijk is a test shooting range into Ijsselmeer positioned on the Afsluitdijk used to a maximum of 85 days per year. The activity does not take place inside the Wadden Sea Area and the tests cause only limited noise disturbance.

A location on Vlieland was used for tank firing. In order to limit the disturbance, the shooting period was confined to 1 September to 15 April. The security zone is situated south of the island. In 2003, the location was used for 13 weeks in total. Since May 2004, the shooting range has been out of order. Since 2005, there has

been no firing at the location, but the shooting range is not officially abandoned.

Marnewaard is an exercise area situated directly adjacent to the Wadden Sea Area northeast of the embanked Lauwersmeer and encompasses an area of 2,500 ha. Next to a much smaller area is a shooting range for armored vehicles. The security zone is situated in the Wadden Sea Area. The shooting range is used to a maximum of 42 days per year (14 weeks per year, three days per week).

Germany

Meldorfer Bucht

The location “Meldorfer Bucht” in Germany has been a ballistic testing site for new weapons of the German Ministry of Defence since the early 1980s. However, over the past 15 years the range has been used on average merely on 0.5 days per year. During several years not one test was registered. Tests are undertaken from platforms on the seawall outside the designated property with the target area stretching into the designated property in Meldorfer Bucht. If tests are carried out, timing is tuned with the National Park Administration Schleswig-Holstein to avoid, as far as possible, sensitive times and disturbances of birds and mammals. Tests are not undertaken during the moulting season for shelducks, which gather in the region in large flocks. Prior to any test, helicopters fly over the area to ensure that the security zone is clear. The remains of the projectiles are also recovered from the Wadden Sea by use of helicopters.

An impact assessment study conducted in 2001 shows that the overall impact on birds, seals and macrozoobenthos is very small. Disturbances of birds due to the helicopter flights have been further minimized since. In combination with the very low frequency of testing activities it can be stated that the testing site has no negative effects on the biological values and the integrity of the Meldorfer Bucht area. Since 2014 the Federal Ministry of Defence is searching for alternative testing sites far outside the Wadden Sea, aiming in the medium term for lowering the pressure on the Wadden Sea.

Denmark

Rømø

The northern part of the island of Rømø is a shooting range for gun and rocket shooting of NATO-military aircrafts at low altitudes. The security zone covers the northern part of the island and part of the tidal inlet between Mandø and Rømø. A larger area is restricted for air traffic during exercise time. The activities are primarily carried out during summer with the exemption of July.

The Air Transport Wing of The Danish Airforce conducts landing/start exercises with Hercules C-130 airlifters at the beach of Rømø on a once-per-year basis. The exercises take place over a three-day period and include 15-20 landing/start operations.

Ho Bay, Skallingen and Oksbøl

Ground forces are allowed to carry out landing exercise operations in the Ho Bay and at the coast of Skallingen north of the 55°38´ latitude. The large exercise and shooting range Oksbøl is located north of the Wadden Sea Area. In connection with exercises on the exercise and shooting range, flights are undertaken on 1-2 days in August to September in the northern Danish Wadden Sea Area in flight corridors.

Other military activities

Other military activities concern the air traffic and associated traffic connected with the use of the exercise areas. In the Dutch Wadden Sea Area, e.g., helicopters are used as stand-by during exercises on the locations. Specific helicopter routes have been designated to limit the disturbance, for example, off the coast of the islands and the minimum flight altitude is 500-600 feet under normal weather conditions.

In the Dutch Wadden Sea, the 'Structuurschema Militaire Terreinen' entails the ultimate closing of the low-altitude-flight route (which crosses area between the island of Schiermonnikoog and Ameland; see Figure 1), an increase of the minimum flight altitude of military aircraft over the Wadden Sea from 300 to 450 m and a shift of the approach corridor to the Vliehors shooting range from the Wadden Sea to the open North Sea (Interwad, 2008). All three measures have been implemented.

For the majority of the German Wadden Sea (defined "costal area"), due to its status as national park, military aircraft must adhere to a minimum flying altitude of 3,000 feet (915 m) for jet-driven aircraft, for propeller-driven aircraft at least 2,000 feet (610 m) and helicopters must fly at an altitude of at least 1000 feet (305 m), unless specific operations or weather conditions dictate otherwise.

The Leybucht, the Außenweser and the Jade, including the Jadebusen, belong to a low altitude flying-area with a minimum flying-altitude of 500 feet (152 m).

There are several military airports in the vicinity of the Wadden Sea Area (De Kooy and Leeuwarden in the Netherlands; Wittmund, Nordholz and Kropp in Germany; Skrydstrup in Denmark) but there is no direct relationship with the use of the Area.

Abandoned exercise areas

In addition to the reductions of activities indicated above, three exercise areas are abandoned:

- Den Helder/ Lutjewaard shooting exercise range in the Conservation Area;
- Noordvaarder on the island of Terschelling was abandoned in 1 July 1995 the exercises were transferred to the Vliehors; the former exercise area was cleaned of ammunition remainders; the area is designated as a Natura 2000 reserve;
- Königshafen exercise area on the island of Sylt was abandoned in October 1992; the exercise area was situated outside the Conservation Area.

Historical ammunition dumping sites

The North and the Baltic Sea have ever been venues for martial conflicts. However, concerning dumped ammunition only the last 140 years are relevant, since within this time breech-loading rifles and artillery were developed, able to shoot grenades with solid shells filled with propelling charges and explosives (Böttcher et al., 2011). These new weapons were installed on shore and on warships and during exercises and war-actions first munition input into the seas took place. During World War I mines were applied to secure harbours and later on air bombs, torpedoes and depth charges followed and partly remained at sea.

In times of rapid development of new weapons and types of munitions and explosives, outdated and inoperative munitions needed to be disposed. Sea disposal of huge ammunition stocks was regarded as efficient and as unproblematic in regards to security. In addition, dumping of conventional and chemical weapons at sea has been developed as a fairly common international practice and was carried out in all oceans over decades until this practice was banned globally by the London convention in 1972 (Böttcher et al., 2011).

One of the last documented dumping event in German coastal waters was the scuttling of 6,000 Tabun gas

grenades south of Helgoland imposed by German officials.

By far the most extensive amounts of warfare agents were dumped in the North and the Baltic Sea in the years immediately following the Second World War, under the command of the Allies (OSPAR, 2005).

According to Böttcher et al. (2011) a legacy of 1.8 million tonnes of conventional munition was dumped into the German waters of the North and Baltic Sea. Until the late 1950s up 250,000 tonnes of this conventional munitions were retrieved by fishermen and professional waste managing companies to recover metals. The latest estimations show that about 1.3 million tonnes conventional munitions remained in the German North Sea and about 300,000 tonnes along the German Baltic coast. In addition, 170,000 tonnes of chemical warfare agents (CWA) were dumped in the North Sea at Skagerrak, Norwegian Sea and German Bight (OSPAR, 2005) without recovery. In the Baltic Sea a legacy of 65,000 tonnes of CWAs were scuttled at Bornholm and Gotland Deep as well as in the Little Belt. For German coastal waters an amount of ca. 5,000 tonnes at the area of the Little Belt and another 90 tonnes near the island of Helgoland are expected to remain on the sea floor (Nehring, 2005; Böttcher et al., 2011).

The majority of conventional ammunition was dumped in the German coastal waters within the 12-nautical-miles zone, while the two biggest dumping sites for chemical weapons are located in deep water bodies of the Skagerrak and the Bornholm Basin (OSPAR, 2005), nowadays belonging to the Norwegian, Swedish and Danish EEZ, respectively

In the Wadden Sea Area of Denmark and the Netherlands, unexploded ordnance devices, munition, torpedoes and ballast droppings are recorded, but there are no official dumping sites. An unofficial dumping site for mainly artillery shells with different calibres, which were transferred from other marine areas, is Engelmansplaat (unpublished data).

For areas of munition dumping (or suspicions), compare maps on AMUCAD, the report by Böttcher et al. (2015).

Today, the dumped munitions and warfare agents are in different stages of decomposition. Their metal shells are corroding and contents are leaking into the environment at a rate that cannot be estimated given present knowledge on the quality of material, posing a risk for the marine eco-system (Beldowski et al., 2016). Beside this risk, human sea-bottom activities, such as bottom trawling, constructions of pipelines and cables as well as windfarms are increasingly claiming space within the contaminated areas. And although it is well known that compounds of the explosives are toxic and some of them even carcinogenic so far only minor effort has been made to assess effects of these large dumping sites on the health of the surrounding ecosystem. Therefore, possible impacts of dumped ammunition along the North Sea coast on the Wadden Sea Area cannot be assessed yet.

3. Summary

Several exercise areas have been already abandoned in the early 1990s. Since then, the activities at the existing sites in all three countries have been reduced and the cooperation of nature conservation and military authorities has been extended in order to minimize the negative effects on the Wadden Sea Area and the designated World Heritage site. The remaining ammunition on the sea floor is still considered as problematic.

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