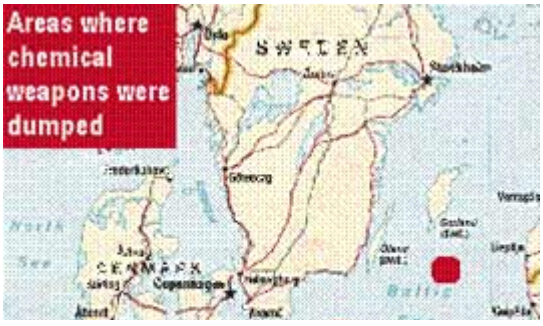
Šią informacija skelbiame anglų kalboje. Primename žvejyba (įskaitant žuvį) ginklų palaidojimo vietuose kelia pavojų gyvybei ir sveikatai.

From World War I until the 1970s, dumping of chemical weapons at sea was the accepted practice for disposal. Little documentation of this practice can be found before the mid -1940s. In 1943, mustard (H) was released into the waters of Bari harbor in . Since the end of World War II, ocean dumping has occurred in many areas, including the Baltic Sea, around Japan, in the Adriatic Sea near Bari, and in the coastal waters of the United States. During the period 1945 -1948, The US scuttled at sea approximately 32,000 tons of captured German chemical weapons. The British dumped approximately 175,000 tons of chemical weapons at sea, with 100,000 tons coming from and the balance from the captured German stockpile. During 1955-56, the British dumped a further 17,000 tons of captured German munitions. During 1956-1957, the British disposed of the remainder of their stockpile of chemical weapons, 8,000 tons of World War II vintage mustard and phosgene munitions. News reports indicate that the ocean dumping in the 1950s occurred in the Irish Sea; some of the British dumps in the late 1940s may have occurred in the North Sea. *(Ref.: 1; 5)*

A poisonous legacy of Nazi Germany, more than 300,000 tons of weapons confiscated by the Allies was dumped between 1945 and 1947 at the bottom of the Baltic Sea. The toxic stockpile includes nearly 65,000 tons of mustard gas, nerve agent sarin and the notorious death camp gas, Zyklon B are beginning to leak, scientists and environmentalists have warned. *(Ref. 1; 2; 3)*

Chemical Weapon Dumping in the Baltic Sea (approximately)			
Location	**Munitions Quantity**	**Chemical Agent Quantity (approx.)**	**Chemical Agent Type**
Bornholm basins	35,300 to 43,399 tons	5,300 to 6,500 tons	Mustard, Clark I, Clark II, Adamsite, chloroacetophenone, phosgene, nitrogen mustards, Tabun
Southwest of Bornholm	Up to 15,000 tons	2,250 tons	Unknown
Gotland basin – near Šventoji - Liepaja	2,000 tons	300 tons	Unknown
Little Belt	5,000 tons	750 tons	Tabun, phosgene



(Ref. 3)

VOA Special English Environment Report says the best way to deal with the weapons is to leave them alone. It says time will destroy what remains. It argues that attempts to remove or contain them are riskier

than leaving them under the sea where they may be buried under sand.

But not all scientists agree. Some say the situation is too risky to leave alone. Vadim Paka is the director of the Institute of Oceanography in Kaliningrad,Russia. He says any highly poisonous substance in the Baltic Sea system is dangerous. He says failing to so could lead to tragedy. Kaliningrad's Shirshov Institute of Oceanology in 1995 research team didn't detect anything out of the ordinary. But a 45-day expedition last fall found traces of mustard gas off the coast of the Swedish city of Lysekil, just across fromDenmark. Also In the dumping sites registered higher acidity and levels of phosphorus. *(Ref. 6)*

Scientists say damage caused by the water has permitted poisons to leak out of their containers. Some are mixing with sand and other sea material. Thick and sticky balls of mustard gas have formed. Fishing crews have pulled up bombs and shells. Some people have suffered chemical burns.

Fishing boats do not always obey restricted areas. Nor do they always know where weapons are located. The Helsinki Commission is an intergovernmental group that supervises the Baltic Sea environment. The commission has published guidelines on how fishing boats can avoid risky areas. These also advise fishing crews what to do if they pull up weapons. Included is medical advice and information on how to clean boats after such an incident. *(Ref. 4)*

Any way the problem where compounded by fishermen's who have gone into risky areas to chase depleted fish stocks, using increasingly aggressive methods, including bottom tackle that snag the bombs. They routinely find mustard gas clumps among their catch and haul up whole or damaged chemical bombs in their nets.

"We had 10 cases of people finding bombs this year," said Begr Rasmussen, head of the Fishermen's Association of Bornholm, the Danish island close to one of the main dumping grounds.Denmark, which offers special incentives for reporting munitions to the military for retrieval, has recorded more than 400 such incidents in the last two decades.

Scientists believe that some of the poisons dissipate in the water, but others, like arsenic, can build up in the food chain. Little is known about their effect on marine biology, but people touching or inhaling them are likely to get hurt. Several fishermen have been treated for burns and other poisoning symptoms after handling leaking shells.

Mr. Rasmussen, of the Bornholm fishermen's association, said it would help if governments from all nine Baltic countries would follow the Danish example. When a Danish captain finds a suspicious object, Mr. Rasmussen said, he calls a naval emergency number. A navy team boards the vessel to disinfect the crew and the ship and destroy the catch. The fishermen are reimbursed for their lost income.

"It's the only way," Mr. Rasmussen said. "We know that Polish, Swedish and German fishermen use bottom nets and pull up bombs. Then they throw them back and they keep scattering them. I say: pay the fishermen, so they're not afraid to lose their catch, and the military will pick up the bombs." *(Ref. 9)*

How are Chemical Weapons Destroyed?

Former Methods of Destruction

Previously the most common disposal methods for chemical weapons were land burial, sea dumping, detonation (firing or exploding the munitions) and open-pit burning. These methods may have been thought to be quite clever at the time (out of sight, out of mind), but their danger has since become starkly apparent.

Buried munitions pose problems environmentally. Once the munitions begin to corrode and leak, the agents can contaminate the surrounding soil and even get into water sources. Sea dumping of chemical munitions is another method of disposal that has caused a number of problems. Some of these dumping operations have occurred in relatively shallow water in the Baltic Sea and off the

coast ofJapan. In both of these regions, dumped chemical weapons caused serious problems for the fishing industry. Fishermen in the Baltic and off the coast ofJapan still haul old chemical weapons up in their nets, and are sometimes exposed to still-active agents.

Scientists argued chemical agents would dissolve harmlessly upon contact with water. But Professor Paka believes their studies have ignore done chillingly unique feature of the sunken arsenal. Nazi scientists commissioned a special new formula of mustard gas for the first winter of

their troubled Russian campaign amid concerns it would not withstand the freezing temperature. The "winter mustard" they delivered contained 37 per cent arsenic, creating a viscous substance that Professor Paka maintains is insoluble. Officials estimate 20 per cent of >Germany's entire poisonous gas production is down there, including almost all the winter gas.

Russian scientists have voiced concerns that Helcom's conclusions are now out of date and governments are afraid to act for fear of sparking a public panic and a long-term recession for fisheries and tourism. A large number of accidents involving fisherman trawling vintage shells off the seabed led Helcom to release detailed guidelines on treating victims of exposure to chemical weapons. Officials reported 36 instances of munitions being dredged up by nets. Even the slightest contact with mustard gas can lead to burns and permanent blindness, the guidelines warn, and heavy waterproofs provide no protection against these antique killers.

A consensus is emerging on a solution that would involve coating the munitions in a special concrete but the cost could be as high as $3bn (£1.8bn).

New York Times
June 20, 2003

Discarded War Munitions Leach Poisons Into
the Baltic

By MARLISE SIMONS

TALLIN, Estonia - American teams may be struggling to find chemical weapons and other poisonous materials in Iraq, but tens of thousands of bombs and barrels filled with blistering agents and nerve gas lie scattered in the Baltic Sea and the eastern Atlantic.

American, British and Soviet military dumped them there after World War II. Entire ships full of weapons, most of them captured from Nazi Germany, were scuttled for disposal and forgotten. Now they have come back to haunt the environment.

Over time, scientists say, the weapon casings have corroded in the seawater and become brittle, allowing poisons like arsenic, lewisite, mustard gas and sarin to leach out. Scientists from the Baltic countries andRussia have found lethal material mixed in with sediments, and highly toxic sulfur mustard gas, transformed into brown-yellow clumps of gel, has washed ashore.

The problem is compounded by fishermen who have gone into risky areas to chase depleted fish stocks, using increasingly aggressive methods, including bottom tackle that snag the bombs. They routinely find mustard gas clumps among their catch and haul up whole or damaged chemical bombs in their nets.

"We had 10 cases of people finding bombs this year," said Begr Rasmussen, head of the Fishermen's Association of Bornholm, the Danish island close to one of the main dumping grounds.Denmark, which offers special incentives for reporting munitions to the military for retrieval, has recorded more than 400 such incidents in the last two decades.

Scientists believe that some of the poisons dissipate in the water, but others, like

arsenic, can build up in the food chain. Little is known about their effect on marine biology, but people touching or inhaling them are likely to get hurt. Several fishermen have been treated for burns and other poisoning symptoms after handling leaking shells.

Fishing is now forbidden around the four main dumping grounds, which hold an estimated 300,000 tons of munitions. But in other areas, where sea currents and bottom tackle have dispersed many shells, vessels are required to keep gas masks, rubber gloves and special medical kits with antipoison powders and injections on board.

Either ignored or kept secret by governments until the 1980's, the dumps have now become a subject of debate among environmental and other concerned citizens' groups, some of whom have demanded urgent cleanups.

With four Baltic states -Poland,Estonia,Latvia and >Lithuania - set to join the European Union next year, all types of pollution are coming under new scrutiny. But there is wide disagreement on what to do about the rusting chemical bombs.

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But the Baltic and the North Sea are only part of the world's underwater chemical weapons graveyards. Large arsenals were also discarded in waters off the United States, Australia, Britain,Canada,Japan andRussia, according to the Organization for the Prohibition of Chemical Weapons in The Hague.

Others sites are still unaccounted for because marine dumping was required to be declared under the Chemical Weapons Convention only after 1985.

Compared with other ocean dumps, the Baltic Sea is particularly sensitive. It is shallower than most and its semi-enclosed, brackish waters are renewed only every 30 years.

Some scientists and politicians insist that the chemical bombs must be retrieved. Arnold Ruutel, the president of Estonia, told a recent meeting on the Baltic environment that the discarded munitions contained an estimated 60,000 tons of toxic agents, including 14 chemicals. He called for a regional plan "to neutralize this source of danger," adding that "this is our responsibility for future generations."

Vadim Paka, director of the Oceanography Institute in the Russian enclave of Kaliningrad, said surveys showed that "even deep waters are not safe for toxic materials because bottom currents can be turbulent and move the poisons around."

He said his team of marine scientists found mustard gas residues in the soil last year and arsenic up to 100 times higher than normal levels.

"I don't think we face a catastrophe," he said. "But any persistent highly toxic agent in the ecosystem is dangerous."

Others, including military experts, insist that it is best to let the weapons degrade in the water, allowing time and bacteria to break them down. Clearing the dumps, they argue, is very costly and risky because the munitions could explode or break up, causing additional damage.

"After numerous studies, the government concluded that it's safest to leave the

munitions alone," Svend Auken,Denmark's former minister of environment, said.

One option being debated is a plan to entomb the deteriorating shells in cement. On the sea floor off the Norwegian and Swedish coasts lie some 40 ships filled with chemical and other weapons, retrieved from Nazi Germany and scuttled on American and British orders in the late 1940's. Mr. Paka said the ships' holds could be pumped full of concrete.

Far more complicated, he said, would be coating the large dumps near the islands of Bornholm and Gotland. There, he said, Soviet soldiers simply threw barrels and shells overboard with no containment, spilling them over large areas. They have been further dispersed by currents and fishermen.

Any solution, other than ignoring the weapons, is likely to cost millions of dollars, and it is not clear who would pay.

For now, the dumps are monitored sporadically by the Helsinki Commission, an international group that looks after the health of the Baltic Sea. Its last assessment, in 1996, said that the chemical weapons "are not causing any appreciable harm to the Baltic environment" and that the situation "has neither improved nor deteriorated."

At the same time, the commission published detailed instructions for fishermen on the first aid equipment they should keep on board and how to quickly treat any contamination.

"It's an illusion to think we can clear up this mess," said Jean-Pierre Henriet, a geophysicist who has tracked dumps of mustard gas weapons in deep waters off the Belgian coast.

"This is a worldwide problem," he said, "and there's no easy way to destroy these munitions in bulk. It's done slowly, one by one." Farmers and fishermen still find them across northern Europe.

With stacks of such weapons from two world wars still waiting to be destroyed, he added, "it makes no sense to collect more from the sea."

England - from http://lists.econ.utah.edu/pipermail/a-list/2002-May/019120.html

According to Eugeniusz Andrulewicz of the Institute of Meteorology and Water Management at Gdynia, Poland, "There are indications that during transport to the dumping area east of Bornholm and southeast of Gotland, the munitions were partially overthrown from ships en route. Some munitions were dumped in wooden cases, which remained floating for some time and might have drifted outside the intended dumping area."

Soviet and British methods of weapons disposal differed markedly. Soviet forces simply threw the munitions over the side of a ship, so they scattered across the sea floor. The British sank the weapons on board single ships, sealing them off for many years but carrying the danger that if the vessel disintegrates for any reason then many chemical weapons will be released simultaneously.

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