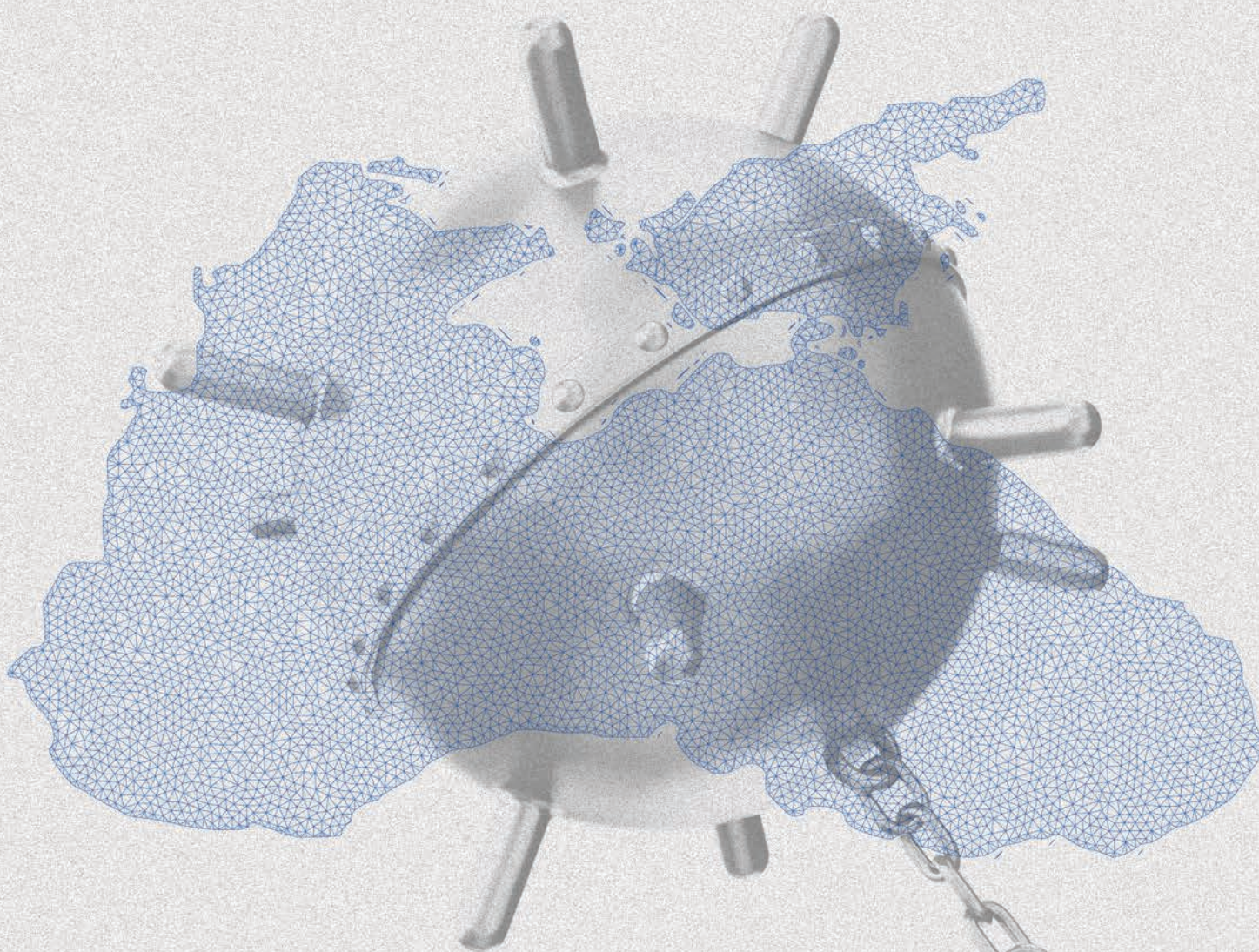


THREAT
ANALYSIS

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By Insikt Group®

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War in Ukraine: Implications for the Black Sea



This report describes the ongoing situation in the Black Sea in the context of Russia's war on Ukraine. It may be of interest to organizations conducting business in Eastern Europe and in countries bordering the Black Sea, clients in the maritime industry, and government organizations focused on defense, international security, intelligence, or international development. This analysis relies on open sources, primarily from mainstream news media such as Russian and Ukrainian news and maritime industry news. It also relies on analyses by the United Nations and the World Bank, along with NATO and US Department of Defense press statements.

Executive Summary

Russia's war against Ukraine has significant implications for the Black Sea. Bordering both Russia and Ukraine, the sea has become a volatile setting for naval attacks, drifting maritime mines, and errant missile attacks on commercial vessels. The sea has historically been an important thoroughfare for international commerce, especially energy and food exports from countries bordering the sea, but the war has brought shipping to a standstill, affecting international food prices and food security in impoverished countries. NATO naval activity in the sea, once routine, has paused as NATO strives to avoid escalation. The threat — particularly from mines — to safety of navigation in the sea, the drop in exports of food and energy products, and the geopolitical implications of the war are already having far-reaching effects in terms of stagnant commercial shipping, increased food and energy prices, and a changed naval landscape in this strategic international waterway.

Key Judgments

- The safety of navigation and commerce in the Black Sea has been severely harmed by Russia's war against Ukraine, as evidenced by attacks on merchant ships at sea, reports of drifting mines, and a drastic decline in shipping.
- The decrease in Black Sea maritime traffic will have far-reaching and continuing international effects on food and energy prices.
- The war is likely to change the region's naval landscape, with NATO likely decreasing naval operations in the area as long as hostilities continue and likely in the immediate aftermath of the war as well.

Background

Prior to the beginning of Russia's war against Ukraine on February 24, 2022, the Black Sea was a busy commercial thoroughfare — the setting of critical international trade, especially the export of agricultural commodities and fuel. Russia and Ukraine collectively [exported](#) more than a quarter of the world's wheat, and Black Sea nations, including Georgia, Bulgaria, Romania, and Turkey, in addition to Ukraine and Russia, [exported](#) significant amounts of steel, along with crude and refined oil.



Figure 1: The Black Sea region (Source: [Britannica](#))

In addition to hosting trade routes for commercial traffic, before the outbreak of war, the Black Sea was a strategic venue for naval activity by the Russian Federation, Black Sea countries, and the US and other NATO member states. The Russian naval base at Sevastopol, on the occupied Crimean peninsula, [hosts](#) Russia's Black Sea Fleet, which has [undergone](#) a decade of modernization and includes at least 6 refurbished Kilo submarines, 3 Admiral Grigorovich-class frigates, and 3 Buyan-M-class corvettes, all equipped with the Kalibr cruise missile system. The guided missile cruiser Moskva was the Russian Black Sea Fleet's flagship — [described](#) by the New York Times as "a symbol of [Russia's] dominance of the region" — until April 14, 2022, when Ukrainian forces sank it with 2 domestically produced Neptune cruise missiles. To counterbalance Russian claims of dominance, the Black Sea is also the home of 2 annual NATO exercises, [Breeze](#) and [Sea Breeze](#), and routine [patrols](#) by US and NATO warships.

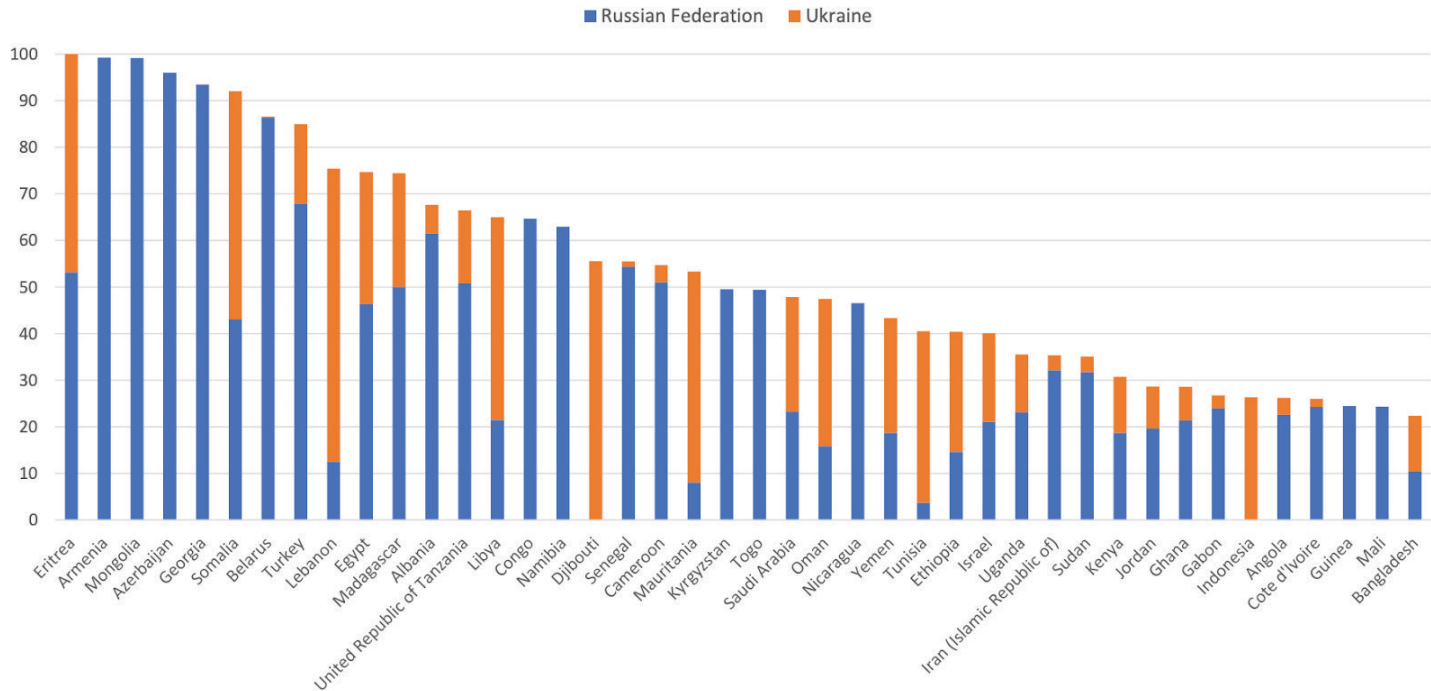
Since the war began, NATO countries have [provided](#) billions of dollars in weapons to Ukraine to counter Russian aggression while avoiding direct involvement in the fighting. NATO secretary-general Jens Stoltenberg clarified NATO's stance on February 28, just days after the conflict began, [declaring](#), "We have no intention of moving into Ukraine, either on the ground or in the air". However, NATO has consistently affirmed that an attack on a NATO country — which Ukraine is not — will be considered an attack on all NATO countries and will trigger a military response under Article 5 of the Washington Treaty. A NATO statement from March 24, 2022, affirms that NATO's commitment to [Article 5](#) is "iron-clad".

Threat Analysis

Cessation of Shipping and Consequences for Food and Energy Supplies

Since the war began, many commercial shipping firms have [suspended](#) services to the Black Sea as a result of the deteriorating security situation, inadvertent attacks on merchant vessels, and the effects of sanctions on Russia. The service suspensions are due in part to the physical risk assumed by ships transiting the Black Sea and to financial risk that has been compounded by maritime insurers [activating](#) exclusion clauses that clear them of liability for war-related damages. Additionally, the Russian Navy has reportedly [blocked](#) more than 90 food-carrying ships attempting to cross the Black Sea, according to Ukraine's AgroPolit[.]com news site. Protectionist policies are having a compounding effect on the level of Black Sea food exports, as Ukraine's government has [prohibited](#) some exports in order to preserve food for its own population. The result of the above factors has been a precipitous decline in exports and imports to the Black Sea region.

Ukraine and Russia are 2 of the world's largest producers of certain agricultural commodities, especially wheat, exporting more than 25% of the world's supply before the war. Before the war, 85% of Ukraine's wheat exports were [shipped](#) from ports on the Black Sea and the Sea of Azov, an inland sea [connected](#) to the Black Sea by the Russian-controlled Kerch Strait. The dramatic decline in Black Sea exports is an important contributor to rising food prices, and is likely to continue affecting prices after the war ends. According to a [prediction](#) by the World Bank in late April 2022, the war is likely to keep food and fuel prices high through the end of 2024. The World Bank further [assessed](#) that the war would cause the biggest shock to commodity prices since the 1970s, when the global economy suffered from "stagflation" (economic stagnation combined with inflation). It named wheat, natural gas, and cotton as commodities likely to see huge price shocks. According to a March 11, 2022, Washington Post report, Middle Eastern and African countries reliant on grain from the Black Sea region are already [seeing](#) steep hikes in food prices, with shortages in wheat, barley, corn, and sunflower oil. The price increase comes in the context of already-soaring prices brought about by the global pandemic and severe weather, and the decrease in food supply is creating food insecurity in impoverished countries. Additionally, Russia is the world's [largest](#) producer of fertilizer, which is produced with liquid natural gas (LNG); thus, the price of fertilizer has risen along with LNG prices. On top of energy price increases, Moscow temporarily [banned](#) fertilizer exports from February to April 2022 to protect domestic supply, which contributed to rising food prices as well.

Wheat Import Dependency, **net importers only**, 2021 (%)Figure 2: Percentage of wheat imports from Russia and Ukraine, 2021 (Source: [UN FAO](#))

Current figures and future predictions regarding food and commodities price increases are significant. According to a Ukrainian economist's study, [published](#) by the think tank Food Tank, food prices worldwide rose 13% in March 2022 alone, the biggest rise in 60 years. The price of vegetable oils rose 23%. Food Tank also cited a United Nations (UN) Food and Agriculture Organization's (FAO) prediction that world food and feed prices could rise 8-20% as a result of the war.

Data from the FAO's report on wheat import dependency in 2021 (Figure 2) illustrate how deeply the Middle East, Africa, and some countries in Central Asia depend on Ukrainian and Russian wheat exports, with Mongolia, Armenia, and Eritrea importing nearly 100% of their wheat from Russian and Ukrainian sources.

Food and energy price hikes related to the war are already spurring economic hardship and protests far from Ukraine or Russia. For example, in April 2022 Indonesians were tear-gassed by police as they [protested](#) high cooking oil prices in the streets of Jakarta. In Egypt, the rise in food and oil prices and drop in tourism revenues caused by the war is [exacerbating](#) mounting economic difficulties, including high inflation, foreign currency shortages, and capital flight. Some supermarkets in Turkey, the United Kingdom, and Spain have [imposed](#) purchase limits on vegetable oil. World energy prices have also significantly [increased](#) as a result of the war, spurring political discontent and inflation. Holistically, Russia's war against Ukraine is expected to significantly damage the world's economic growth prospects this year, with the World Bank in April [lowering](#) its global growth projection for 2022 from 4.1% to 3.2%, citing supply shocks and commodity price increases due to the war. The World Bank further [predicted](#) in an analysis released in late April 2022 that energy and food prices will remain high into 2025 as a result of the conflict.

Mines: An Enduring Threat

In early March, the Russian Federal Security Service (FSB) [claimed](#) that Ukraine had planted more than 400 mines near the [approaches](#) to 4 of its ports and that a cable securing these mines had snapped due to severe weather, sending the mines adrift. Government authorities in Bulgaria [released](#) a warning about drifting mines, and the Turkish and Romanian defense ministries both reported encountering mines in the Black Sea. The Ukrainian government described Russia's characterization that Ukraine had planted the mines as "misinformation" and [alleged](#) it was a Russian attempt to close off shipping in the Black Sea. The UK Ministry of Defence [alleged](#) that Russia almost certainly planted them.

At least 3 drifting mines were discovered in the Black Sea in late March 2022, and [Russia](#) and [Ukraine](#) traded allegations of having planted them. The first of the 3 mines was [reportedly](#) found and disarmed on March 26 near the entrance to the Bosphorus Strait, which is bordered by Turkey on both sides and connects the Black Sea with the Sea of Marmara. Discovery of the mine so close to the Bosphorus Strait raised concerns the mines could drift south into the eastern Mediterranean. Subsequently, on March 28, 2 more mines that were reportedly "old" and of a "Soviet" make were [discovered](#) by Romanian and Turkish divers, one near the Romanian military base of Capu Midia, and the other near the Turkish town of İğneada. The mines pose a serious and ongoing hazard to navigation in the Black Sea and beyond. Maritime insurers have [advised](#) vessels in the Black Sea to use mine look-outs.

The mines are reportedly anchor mines of the old Soviet [YaM and YarM type](#). They are built to float but are held by a cable submerged just below the waterline, hiding them from sight. According to a naval expert [cited](#) by German media outlet Deutsche Welle, the recovered mines are in poor condition. Optimistically, this could render many of them ineffective; alternately, it could make them more sensitive to detonation, posing an unpredictable threat. The YaM mine reportedly weighs 172 kg and carries a 20 kg explosive payload. The YarM, a river mine, [weighs](#) approximately 30 kg and carries a 3 kg payload.

Notably, the Ukrainian military did [mine](#) its own territorial waters to ward off Russian invasion forces and warned mariners in accordance with international law. Ukraine [accused](#) Russia of deploying naval mines as "uncontrolled drifting ammunition" and, in doing so, threatening "civil navigation and human life at sea in the whole waters not only of the Black and Azov Seas, but also of the Kerch and Black Sea Straits". Ukraine's defense minister, Oleksii Reznikov, [asserted](#) that Russia seized Ukrainian mines from the occupied port of Sevastopol and littered them in the Black Sea "in an attempt to commit terrorist acts against civilian vessels".

Turkish defense minister Hulusi Akar [asserted](#) that the mines may have been "left intentionally" to trigger the entrance of NATO minesweepers into the Black Sea to "put pressure on Turkey" but affirmed that "Turkey is determined to comply with the Montreux Convention". The Montreux Convention is an international agreement first [signed](#) in 1936 by the Black Sea states of Bulgaria, Romania, the Soviet Union, and Turkey, and later by Britain, France, Greece, Japan, and Yugoslavia in the lead-up to World War II. The agreement gives Turkey the authority to approve the passage of non-Black Sea states' warships into the Black Sea, and the power to close off the Bosphorus and Dardanelles Straits, which separate the eastern Mediterranean from the Black Sea, to belligerent naval vessels in times of war. There is no evidence to substantiate the theory that the mines would have been planted in a bid to pressure Turkey regarding the straits. Granting NATO warships permission to enter the straits, while sure to be politically controversial given the ongoing hostilities, does not [violate](#) Article 19 of the Montreux Declaration, which holds that only belligerent nations should face restrictions on passage, while those uninvolved in the fighting should be permitted passage as usual.

The mines discovered by the Turkish and Romanian navies were likely planted by Russia, but regardless of their origins and who deployed them, they pose a serious and ongoing risk to commercial and military traffic in the Black Sea and Azov Sea and their adjacent straits, and potentially even as far away as the Mediterranean.

Merchant Vessel Casualties

In perhaps the clearest indication of the danger posed to vessels at sea by the ongoing war in Ukraine, more than 5 merchant ships have been sunk or sustained severe damage by reported projectiles or mines in the Black Sea since the war began. These ships almost certainly fell victim to naval mines or errant missile attacks by Russian forces.

Name / IMO# / Flag of Vessel	Vessel Type	Description of Incident	Date
Yasa Jupiter / 9848132 / Marshall Islands	Bulk Cargo	Turkish-owned grain ship chartered by US firm Cargill reportedly " hit by a Russian projectile" at Cargill-operated port of Yuzhny, Ukraine on the first day of the war	Feb 24
Namura Queen / 9841299 / Panama	Bulk Cargo	Reportedly hit by a rocket off the coast of Ukraine according to its local agent	Feb 25
Millennial Spirit / 7392610 / Moldova	Chemical Tanker	Tanker carrying 600 tons of fuel reportedly hit by a Russian missile launched from a Russian ship, according to the Ukrainian Ministry of Defense	Feb 25
Banglar Samriddhi / 9793832 / Bangladesh	Bulk Cargo	Reportedly hit by a "missile or bomb" at the port of Olvia, near Mykolaiv, Ukraine	Mar 2
Helt / 8402589 / Panama	General Cargo	Estonian-owned vessel reportedly struck a mine near Odessa, Ukraine; damage reported below the waterline consistent with a mine — however, the maritime authority of Panama (the ship's flag country) claimed the ship was struck by a missile	Mar 4
Lord Nelson / 9296315 / Panama	Bulk Cargo	Hit by a missile, according to the Panamanian maritime authority	Unknown

Table 1: Commercial vessel casualties in the Black Sea since February 24, 2022



Figure 3: Banglar Samriddhi after being struck by a probable Russian missile at the port of Olvia, Ukraine in March 2022 (Source: [gCaptain](#))

Naval Implications

Every year, NATO [conducts](#) the joint exercises Breeze and Sea Breeze in the Black Sea. According to a NATO press release, Breeze 2021 sought to “enhance interoperability among participating units and strengthen NATO’s readiness in the Black Sea region”. Sea Breeze, an annual bilateral NATO exercise since 1997 jointly [hosted](#) by Ukraine and the US’s Sixth Fleet with NATO [participation](#), addresses “multiple warfare areas including amphibious warfare, land maneuver warfare, diving operations, maritime interdiction operations, air defense, special operations integration, anti-submarine warfare, and search and rescue operations”, according to a press release by the US Navy regarding Sea Breeze 2021.

According to a January 2022 article by Ukrainian news site Ukrinform[.]net, more than 60 countries would be invited to [Sea Breeze 2022](#), and a planning meeting for the exercise was to take place in March 2022. It is unclear if the planning continued as scheduled. However, it is very unlikely that the exercise will take place this year due to ongoing hostilities and the risk of escalation.

Since the war began, the US has [pulled](#) destroyers from the Black Sea, with Pentagon press secretary John Kirby stating that “It was deemed a prudent decision ... to make it very clear to everybody that the United States was not interested in forcing a conflict”. The last time a US warship [transited](#) the Black Sea was December 2021, based on available reporting. However, Kirby also [explained](#) that the lack of US naval presence in the Black Sea was a result of a natural fluctuation of forces, saying that US Navy vessels enter and exit the Black Sea as needed. He also acknowledged the US’s desire to de-escalate tensions, saying the US “was not interested in forcing a conflict by some posture decision”. Kirby has not committed to any time period in which US naval assets would return to the Black Sea.

In February 2022, Reuters [reported](#) that the last vessel of a major NATO member state to operate in the Black Sea was a French ship in early January 2022, and that NATO member states collectively avoided the Black Sea in the immediate buildup to war in Ukraine due to lack of agreement on whether to challenge the Russian navy at sea. This reported lack of agreement resulted in “a lack of a coherent and meaningful Black Sea NATO strategy”, according to Reuters’s investigative reporting, which cited unnamed diplomats, intelligence officials, and military strategists, among others.



Figure 4: Russia's Black Sea Fleet staged naval drills in July 2021, as Russian troops had already begun to amass on Ukraine's border (Source: Kremlin.ru via [Moscow Times](#))

Since the war began, NATO countries have remained committed to staying out of direct military confrontation and avoiding situations that may be escalatory or force NATO into the war. Mines and anti-ship cruise missile activity in the Black Sea — most notably, the sinking of the cruiser Moskva — underscored the danger of entering the area and the risk of NATO being drawn in by an errant or purposeful Russian attack. Retired US Navy admiral James Stavridis, who previously served as the commander of NATO's Allied Command Operations, [commented](#) that the Moskva attack “will have an effect on global operations of all navies” and serve as “a stark reminder of the vulnerability of surface ships ... to relatively low-cost, numerous and technologically advanced cruise missiles”.

The war may also have long-term effects on Russian naval movements in the Black Sea, as it has provided the first modern-day test of the Montreux Convention. Turkey is [enforcing](#) the convention, prohibiting Russia from replacing the sunken Moskva with another asset and likewise prohibiting Russian ships from [entering](#) or presumably from departing the Black Sea, unless it is to return to their home ports. Although the Montreux Convention has been in effect since 1936, it was not clear until this conflict that Turkey would enforce all of its measures. Turkey's willingness to do so will likely force the Russian government to consider its out-of-area deployments more carefully and potentially to use them more sparingly.

Outlook

Russia's war against Ukraine will pose an active threat to shipping in the Black Sea, particularly in the northwest, for as long as it continues. The presence of mines, along with any lingering hostilities and continuing anti-ship missile attacks, will prolong the stagnation in supply routes and discourage maritime traffic through the Black Sea, Turkish Straits, and Sea of Marmara long after the conflict comes to an end, especially if any verified incidents occur in which a vessel is damaged or destroyed by a naval mine.

Food shortages in Africa and the Middle East as a result of halted grain exports from Russia, Ukraine, and other Black Sea countries will likely continue for months and potentially years after the conflict ends; the severity of these shortages will depend upon the length of the conflict. The conflict will also likely continue to affect world economic growth for several years. The sooner the fighting resolves, the sooner these effects will be mitigated; however, the supply shortages and high prices will only correct gradually and will not stabilize or decrease significantly in the event that fighting resolves in the near-term.

From a naval perspective, based on NATO's statements regarding the war, NATO naval activity in the Black Sea (by countries that do not border the sea) is likely to remain low when compared to pre-war levels while fighting continues and likely for some time after, in a bid to avoid provocations and miscalculations. However, there has been a lack of specific reporting on NATO intentions regarding future Black Sea patrols. While the war continues, NATO countries not bordering the Black Sea will likely continue to abstain from Black Sea naval deployments that could lead to escalation. Likewise, when the war winds down, NATO will likely avoid naval activities in the region that could be considered by Russia as escalatory.

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