

"Humanity is waging war on nature. This is suicidal. Nature always strikes back, and it is increasingly doing so with growing force and fury . . . we must use 2021 to address our planetary emergency." 184

-António Guterres, "State of the Planet Speech,"
Columbia University, December 2020

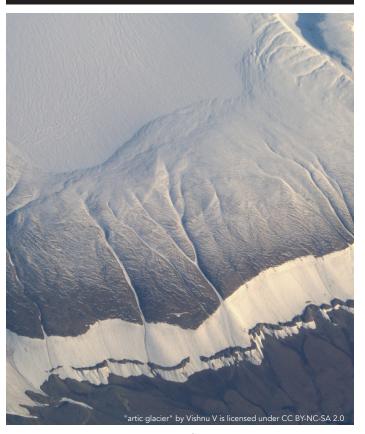
The climate-security century is here. With global temperatures rising, climate change is poised to massively destabilize the physical environment. 185 This century may well be defined by our ability (or inability) to reduce our collective greenhouse gas emissions. We must also adapt and respond to climate change's multivariate security impacts. From raging wildfires in Australia and California to melting ice sheets and permafrost in the Arctic, climate change acts as both a threat accelerant and a catalyst for conflict. 186 Climate change is also unlike any other traditional security threat. It accelerates and exacerbates existing environmental stressors—such as sea level rise, extreme weather, drought, and food insecurity—leading to greater instability. 187 Climate change impacts are already taking center stage this century, forcing us to think more broadly about climate change's relationship with human security and national security. 188

Complicating matters, climate-driven temperature increases do not rise in a neat, uniform fashion around the globe. The pace of climatic change unfolds unevenly and erratically. Some parts of the world—such as the Arctic—are warming at a rate two to three times faster than the rest of the world. Three specific climate-security "hotspots" foreshadow greater destabilization and serve as climate "canaries in a coal mine"—a sneak preview of our climate-destabilized future.

These hotspots include:

- (1) An Arctic transformed by climate change and a new operational environment; opening trade routes and sparking a potential race for natural resource extraction in the High North.
- (2) The plight of Pacific Small Island Developing States (SIDS), where climate-driven sea level rise is swallowing nations whole, raising the specter of climate refugees and possible nation extinction.
- (3) The African Sahel—where climate change is leading to increased drought and food insecurity in a poor, developing part of the world, serving as a tinderbox for resource conflicts.

CLIMATE HOTSPOT #1: A CLIMATE-TRANSFORMED ARCTIC



Due in large part to the pace of climate change, the Arctic is quickly emerging as a region of increasing military and economic importance. The Arctic is warming faster than the rest of the planet, driven by a self-reinforcing feedback loop known as the albedo effect, which accelerates the melting of polar ice caps and permafrost. ¹⁸⁹ In turn, melting polar ice sheets are forming new trade routes through Canada (the Northwest Passage) and along the Russian border (Northern Sea Route). Along the Arctic's continental shelf, climate change is renewing interest in natural resource extraction, where close to 30 percent of the world's untapped natural gas resides.

The "law of the Arctic" is largely governed by the work of the Arctic Council, the United Nations Convention on the Law of the Sea (UNCLOS), and an assortment of laws and bilateral agreements among the eight Arctic states. ¹⁹⁰ Contrast this to Antarctica, which today is governed by the comprehensive Antarctic Treaty System (ATS). Antarctica is similarly poised for climate-driven physical destabilization and is, effectively, a "land without a sovereign" that has been successfully demilitarized since the ATS entered into force 60 years ago. ¹⁹¹

In contrast to its South Pole cousin, there is no Arctic Treaty. The Arctic Council is characterized by an evolving "soft law" system of collaboration among its eight voting members. The eight Arctic Council states include Denmark (via Greenland), Russia, the United States, Norway, Canada, Finland, Iceland, and Sweden. Critically, China is *not* a voting member of the Arctic Council, although China has declared itself a "near Arctic" nation

and has increasing ambitions in the region as it stands to benefit from the opening of international trade routes. Of these eight members, five nations—Denmark, Russia, the United States, Norway, and Canada—are Arctic "coastal states" that have a continental shelf in the Arctic Ocean. These five coastal states can potentially extract valuable natural resources (oil, gas, minerals) from their respective "wedge" of the Arctic continental shelf that meets at the North Pole.

Despite the potential for conflict and tension, the Arctic Council has enjoyed some success in managing competing Arctic interests among its voting and nonvoting members. It has demonstrated a remarkable capacity to tackle increasingly complex issues. For example, the Arctic Council recently addressed matters of broader concern, such as an agreement addressing unregulated fishing in the Arctic high seas and an Arctic search and rescue-related agreement.

However, in the face of massive climate change, tension points are starting to emerge. By its own mandate, the Arctic Council is prohibited from addressing matters of military security. As such, military security matters are not on the Arctic Council's agenda. This is largely left to NATO and individual nations to navigate. In a geopolitical twist, four of the five Arctic coastal states are original NATO members. This provides a counterweight to growing Russian militarization in the Arctic. In the absence of a central, organizing Arctic military forum, Russia has invested heavily in Arctic military infrastructure, and the NATO members of the Arctic Council (the United States, Canada, Denmark, Iceland, and Norway) have shown a renewed interest in military exercises in the region.

While the Arctic Council's 2008 Ilulissat Declaration reaffirmed the Arctic Council's commitment to the law of the sea framework, one key Arctic Council member the United States—remains an outlier as a non-party to UNCLOS. 193 This international treaty, often referred to as the "Constitution of the Oceans" largely governs maritime issues in the Arctic Ocean to include the increasingly important rights of Arctic innocent and transit passage. 194 Additionally, UNCLOS establishes a key scientific and technical body, the Commission for the Limits on the Continental Shelf (CLCS). The CLCS provides technical expertise to help ascertain the breadth of each individual nation's continental shelf claims. 195 Indeed, four of the five Arctic coastal states have already submitted information to the CLCS in support of their continental shelf claims. The United States has not made a similar submission to the CLCS for its enormous Alaskan continental shelf, and again, as a non-party to UNCLOS, the U.S. will likely not be able to avail itself of the CLCS process.

In 2007, Russia shocked the world by planting a Russian flag on the North Pole. This was an act of no legal significance but nevertheless signaled broader Russian ambitions in the Arctic. Today, Russia claims an outer continental shelf that extends to the Lomonosov Ridge—an enormous area with vast untapped oil and natural gas resources that overlaps with the North Pole.

While remaining a non-party to UNCLOS, the United States has nevertheless served as a good law of the sea partner in many respects. For example, the United States views UNCLOS's key navigational provisions as binding customary international law. Additionally, the U.S. Navy has complemented and enforced many key UNCLOS provisions via freedom of navigation operations and diplomatic assertions around the world. Despite the U.S. Senate's failure to provide its advice and consent to UNCLOS ratification, a remarkably diverse coalition of American national security experts, environmentalists, and business interests support the U.S. becoming a party to UNCLOS. U.S. failure to ratify UNCLOS should be remedied as it is contrary to U.S. long-term national security and economic interests in the Arctic and elsewhere.196

Outside of natural resource extraction, two seasonal waterways—the Northwest Passage, which runs through Canada, and the Northern Sea Route, which hugs the Russian coastline—are both found in the Arctic. Canada has long viewed the Northwest Passage as Canadian internal territorial waters. 197 While the U.S. and Canada have "agreed to disagree" on the legal status of the Northwest Passage, tensions have risen pertaining to the scope of Russia's authority to regulate shipping along the Northern Sea Route. Russia has increasingly asserted an expansive view of its authority over ice-covered areas along the Northern Sea Route, requiring prior notification from foreign ships before transiting.

Perhaps most importantly, what happens in the Arctic does not stay in the Arctic. The melting permafrost in Greenland and Arctic tundra increases the possibility for cataclysmic "green swan" events. This can cause dramatic sea level rise, impacting vulnerable coastlines and small island developing states, discussed below.



CLIMATE HOTSPOT #2: SMALL ISLAND DEVELOPING STATES & NATION EXTINCTION

the legitimacy costs of both action and inaction for "combating" this non-traditional threat?



The plight of global climate migrants—both at SIDS and throughout the world—is an issue of increasingly grave concern.²⁰⁰ By one estimate, over 150 million people will be displaced by rising sea levels by the year 2050.201 One recent study found that two-thirds of the world's population faces severe water shortages, a catalyst for cross-border human migration.²⁰²

In addition, many small island nations are uniquely vulnerable to extreme weather patterns. Climate attribution science now links climate change, rising temperatures, and the increased likelihood of extreme weather.²⁰³ Tragically, these small island nations often lack the capacity to adapt and

respond to these patterns. In 2020, for example, one of the largest storms to ever hit the South Pacific—Cyclone Harold—struck several Pacific Island nations, triggering an estimated 99,500 displacements.²⁰⁴

Finally, critical U.S. national security infrastructure in the region is increasingly at risk due to climate change. For example, the U.S. operates a key military installation and radar facility at Kwajalein Atoll in the Marshall Islands that helps protect the U.S. from North Korean missiles. Climate scientists estimate that rising seas may cause parts of the Marshall Islands to become uninhabitable as early as 2035.

Far away from the Arctic and closer to the equator, scientists predict that four Pacific Small Island Developing States (SIDS) may become uninhabitable by mid-century due to climate change-driven sea level rise and wave-driven flooding. 198 The specter of potentially "stateless" UN member states (Kiribati, Maldives, Republic of Marshall Islands, and Tuvalu) strikes at the core of the UN Charter-system, raising novel questions of both international law and environmental justice. It also exposes a governance gap in international law, which does not adequately protect climate migrants fleeing from climate-driven weather impacts and uninhabitability. The 1954 World Refugee Convention, for example, is silent on migrants fleeing environmental or climate disaster.

Since the Second World War, the UN Charter has played an important role in stabilizing international order by upholding national territorial integrity and the sovereign equality of each Member nation.¹⁹⁹ While SIDS are relatively small in physical size, population, and economy, they have equal standing as sovereign nations.

Several questions now arise: With climate change undermining the territorial integrity and sovereignty of these nations, what is the responsibility of developing nations—which have contributed disproportionately to global warming—to alleviate this slow-moving tragedy? Can the UN Security Council and other international governance institutions afford to remain silent while nations face climate-driven statelessness? What are

CLIMATE HOTSPOT #3: THE AFRICAN SAHEL AND THE CLIMATE-CONFLICT NEXUS

In a cruel twist, climate change disproportionately harms nations that contributed the least to global greenhouse gas emissions and have the fewest resources to adapt to climate change's impacts. This includes both SIDS and the poverty-stricken African Sahel—an area deeply reliant on agriculture but already suffering from climate-exacerbated food insecurity and conflict.²⁰⁵ The Sahel region of West Africa, for example, is one of the poorest regions in the world with 40 percent of the population living on less than USD 1.90 per day. The population—where 80 percent of the poor live off the land—is also growing at an astonishing rate: the Sahel's population is expected to double by 2045.²⁰⁶ The climate is also warming in

the Sahel far faster than the rest of the world, further increasing the threat of droughts and extreme weather.

In a recent Security Council debate on climate security, the World Meteorological Chief Scientist stated:

Climate change has a multitude of security impacts—rolling back the gains in nutrition and access to food; heightening the risk of wildfires and exacerbating air quality challenges; increasing the potential for water conflict; leading to more internal displacement and migrations . . . it is increasingly regarded as a national security threat.²⁰⁷

There is a growing body of scholarship that connects climate change's multivariate impacts and violent conflict. ²⁰⁸ In 2020, the International Committee of the Red Cross estimated that 12 of the 20 most vulnerable countries to climate change were in a state of conflict. ²⁰⁹ An estimated 1.25 million people were displaced in the

to international peace and security.²¹¹ Consistent with this mission, the council has begun to address climate change. It first recognized the linkage between environmental security and international peace and security back in 1992, in the aftermath of the Persian Gulf War and the environmental destruction of oil fields.²¹² This recognition of the role that non-traditional security threats have on peace and security was followed by a recognition that other threats—such as HIV/AIDS (2000) and Ebola (2014)—can undermine international peace and security.

For the past several years, the UN Security Council has hosted open debates on climate-security matters. Further, in 2017, it took the historical step of linking climate change with the deteriorating security situation in the African Sahel. In UN Security Council Resolution 2349, the "adverse effects of climate change and ecological change" in destabilizing the security situation in the Lake Chad Basin is specifically highlighted. Since this resolution was issued, the council followed up with additional resolutions in Somalia, Darfur, West Africa and

the Sahel, and Mali.²¹⁴



To be sure, the Security Council has yet to make the formal determination that climate change (or one of its many impacts) are a "threat to the peace" within the meaning of Article 39 of the UN Charter.²¹⁵ However, there is a growing precedent for the council to use its authorities to address non-traditional security threats, and, in the coming years, the body will be under increasing pressure to address climate-driven security matters in some fashion.²¹⁶ An Article 39 declaration serves as the legal key, which opens the door for the council to use its awesome Chapter VII authorities.

African Sahel nations of Burkina Faso, Mali, and Niger due to extreme rainfall and flooding (as climate change makes rainy seasons shorter and less predictable).²¹⁰

Much like climate change's threat to the territorial integrity and sovereignty of SIDS, climate change's destabilizing role in the African Sahel is forcing international legal institutions to reimagine what role they might play in addressing underlying causes of conflict and instability. Consider the potential role for the UN Security Council in matters of international climate security. The Security Council is the international organ with the responsibility "for the maintenance of international peace and security," as well as the authority to take action to address threats

As the earth warms, climate hotspots such as the African Sahel will increasingly bear the brunt of climate change's impacts. In turn, international institutions will be pressured to take action. Just as climate change destabilizes the physical environment, it may well drive international institutions—such as the UN Security Council—to reimagine its role to address climate change and its debilitating impacts on developing nations.

A CLIMATE-SECURITY RESET FOR THE UNITED STATES?

Within a month of taking office, U.S. President Joe Biden released two important executive orders on climate-



security matters: (1) "Executive Order on Tackling the Climate Crisis at Home and Abroad" and (2) "Rebuilding and Enhancing Programs to Resettle Refugees and Planning for the Impact of Climate Change on Migration."

The Executive Order on Tackling the Climate Crisis at Home and Abroad makes clear that the world faces a "profound climate crisis" and that U.S. international engagement to address climate change "is more necessary and urgent than ever."²¹⁷ In the Executive Order, President Biden makes it clear that climate considerations "shall be an essential element of U.S. foreign policy and national security."²¹⁸ In re-energizing climate-security matters, the new administration understands that climate security is simply too important to be left solely in the hands of the Department of Defense (or State Department).

President Biden is elevating several people within his Cabinet who have deep experience in climate change and security matters, favoring a whole-of-government approach. This reflects a mature acknowledgement that climate change requires integration across national security planning and institutions. For example, former Secretary of State John Kerry's new position as Special Envoy for Climate will also have a seat on the National Security Council—a historic first. Additionally, former EPA Administrator Gina McCarthy was tapped to serve as the nation's first National Climate Advisor, leading a new interagency National Climate Task Force.

President Biden's executive order on resettling refugees emphasizes that human migration is often due to climate change impacts. ²¹⁹ This order reinvigorates the role of the United States Refugee Assistance Program throughout the immigration process "in a manner that furthers [American] values as a Nation." ²²⁰ It also requires that National Security Advisor Jake Sullivan develop a comprehensive report for the President on climate change's impact on migration as well as its international security

implications.²²¹ While it remains unclear how the results of this report will be implemented, this signals an important willingness to think broadly about the relationship between climate change and immigration patterns.

Relatedly, a reinvigorated role for climate-security matters in the forthcoming National Security Strategy (NSS) is expected. This highly influential document sets the tone for the new administration's overarching national security policies. Since President George H.W. Bush, every U.S. President has issued an NSS that squarely addresses climate change and its national security impacts. "Climate" or "climate change" was mentioned 19 times in President Obama's 2015 NSS. For example, the 2015 NSS stated:

Climate change is an urgent and growing threat to our national security, contributing to increased natural disasters, refugee flows, and conflicts over basic resources like food and water. The present-day effects of climate change are being felt from the Arctic to the Midwest. Increased sea levels and storm surges threaten coastal regions, infrastructure, and property. In turn, the global economy suffers, compounding the growing costs of preparing and restoring infrastructure.²²²

In a prescient nod to the importance of recognizing non-traditional security threats, the 2015 NSS made clear the high priority of "meet[ing] the urgent challenges posed by climate change and infectious disease." ²²³

While climate change was omitted from the Trump Administration's 2017 NSS, the Biden Administration's Interim NSS features climate change and its security impacts prominently.²²⁴ It states:

The climate crisis has been centuries in the making, and even with aggressive action, the United States and

the world will experience increasing weather extremes and environmental stress in the years ahead. But, if we fail to act now, we will miss our last opportunity to avert the most dire consequences of climate change for the health of our people, our economy, our security, and our planet.²²⁵

FUTURE QUESTIONS

As we look ahead to the challenges of the climate-security century, the most salient questions that arise include:

- What is the true pace of climate change in the Arctic, and how will this impact both U.S. interests and Russia and China's ambitions in the High North?
- How can the U.S. renew climate science efforts at the Arctic Council?
- Does the U.S. have the necessary relationships and authorities to prepare for an uptick in food insecurity and increasing natural resource conflicts in the African Sahel?
- Is the U.S. prepared for massive migration in the Pacific and other parts of the world?

By identifying, planning for, and resourcing the three climate hotspots, the U.S. will find itself in a much better position to reinvigorate the interagency process and reclaim U.S. leadership in addressing the challenges of this "climate-security century."

184 Andrew Freedman, U.N. warns of 'suicidal' climate path, Wash, Post, at E2 (Dec. 15, 2020) (quoting U.N. Secretary General Antonio Guterres). We must make no mistake. The facts are clear. Climate change is real, and it is accelerating in a dangerous manner. It not only exacerbates threats to international peace and security; it is a threat to international peace and security. Secretary General Ban Ki-Moon, Remarks to the Security Council on the Impacts of Climate Change on International Peace and Security, United Nations Secretary General, Jul. 20, 2011, https://www.un.org/sg/en/content/sg/speeches/2011-07-20/remarks-security-council $impact\text{-}climate\text{-}change\text{-}international\text{-}peace (last visited Jul. 31, 2020)}.$

¹⁸⁵ J.B. Ruhl & Robin Kundis Craig, 4°C, (2021 manuscript on file with author).

¹⁸⁶Sherri Goodman, Threat Multiplier: The Growing Security Implications of Climate Change, A ${\it Conversation with Sherri Goodman, Fletcher Security Review, (2019) Military Advisory Bd., CTR.}$ FOR NAVAL ANALYSES, NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 39 (2007).

 $^{\rm 187}\text{Some}$ scholars have made the connection between climate-driven drought and political instability in Syria. Marwa Daoudy, The Origins of the Syrian Conflict: Climate Change and Human Security (Cambridge 2020).

¹⁸⁸Timothy M. Lenton, Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, $\label{thm:condition} \mbox{Will Steffen \& Hans Joachim Schellnhuber} \ , \ \mbox{\it Climate Tipping Points} \mbox{\it -Too Risky to Bet Against},$ 575 Nature 592, 592-95 (2019) (corrected April 9, 2020), https://www.nature.com/articles/ d41586-019-03595-0). There is some scholarly debate addressing whether climate change is properly framed as a national security issue or human security issue

¹⁸⁹The melting permafrost, in particular, has a devastating impact on GHG emissions.

¹⁹⁰The member of the Arctic Council include Denmark (via Greenland), Russia, United States, Norway, Canada, Finland, Iceland, and Sweden.

¹⁹¹Mark Nevitt & Robert V. Percival, Polar Opposites: Assessing the State of Environmental Law in the World's Polar Regions, 59 Boston College Law Review 1655 (2018).

192Ottawa Declaration n. 1 (1996) "The Arctic Council should not deal with matters of military

¹⁹³The Ilulissat Declaration at the Arctic Ocean Conference 1–2 (May 28, 2008), http://www. oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf (The UNCLOS "framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic

¹⁹⁴U.N. Convention on the Law of the Sea, article 17 (Right of innocent passage); article 38 (Right

¹⁹⁵U.N. Convention on the Law of the Sea, article 76.

¹⁹⁶Mark Nevitt & Robert V. Percival, Polar Opposites: Assessing the State of Environmental Law in the World's Polar Regions, 59 Boston College Law Review 1655 (2018).

¹⁹⁷Daniel Steinfeld, The U.S. – Canada Northwest Passage Dispute, Brown Political Review (Apr.

¹⁹⁸See Storlazzi et. al, Most atolls will be Uninhabitable by the mid-21st century because of sea level rise exacerbating wave driven flooding, 4 Science Adv. 4 (2018), available at: http:// advances.sciencemag.org/content/4/4/eaap9741

¹⁹⁹U.N. Charter art. 2, para 1. The United Nations is "based upon the principle of the sovereign equality of all its Members." Id.

²⁰⁰I use the broader term of "climate migrants" throughout the paper as it best captures the numerous reasons—all driven by climate change—why people flee their homes. For a helpful discussion of this academic debate, see Philip Dane Warren, Note: Evaluating Climate Change Displacement, 116 COLUM. L. REV. 2103, 2109-10 (2017).

²⁰¹Abrahm Lustgarten, Refugees Flee from the Earth, N.Y. TIMES MAGAZINE, 11, 18-19 (Jul. 26,

²⁰²Nicholas St. Fleur, Two-Thirds of the World Faces Severe Water Shortages, N.Y. TIMES, Feb. 12, 2016, https://www.nytimes.com/2016/02/13/science/two-thirds-of-the-world-faces-severe-water- $\hbox{shortages.html. U.N. Human Rights Commission, } \textit{Figures At A Glance, http://www.unhcr.org/en-us/to-properties of the properties of t$ figures-at-a-glance.html (last visited Aug 4, 2020)

 203 See American Meteorological Society, Explaining Extreme Events of 2017 from a Climate Perspective, available at: https://www.ametsoc.org/ams/index.cfm/publications/bulletin-of-theamerican-meteorological-society-bams/explaining-extreme-events-from-a-climate-perspective/signal and the second control of the sec(finding that 15 of 16 extreme weather events were made more likely by human caused climate

²⁰⁴WMO, State of the Global Climate 2020, 30 (2020).

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²⁰⁶Christian Bodewig, Climate change in the Sahel: How can Cash Transfers help Protect the poor?, Brookings, Dec. 4, 2019.

²⁰⁷See U.N. News, Climate Change Recognized as 'threat multiplier', UN Security Council debates its impact on peace, Jan. 25, 2019, https://news.un.org/en/story/2019/01/1031322 (quoting Professor Pavel Kabat, Chief Scientist, UN World Meteorological Organization).

²⁰⁸Kendra Sakaguchi, Anil Varghese, Graeme Auld, Climate Wars? A Systematic Review of Empirical Analysis on the Links Between Climate Change and Violent Conflict, INTERNATIONAL

²⁰⁹ICRC, Climate Change & Conflict (2020). https://www.icrc.org/en/document/icrc-report-climatechange- and- conflict- are-cruel- combo-stalk-worlds-most-vulnerable

²¹⁰WMO, State of the Global Climate 2020, 30 (2020)

²¹¹U.N. Charter, art. 24.

²¹²U.N. SCOR, 3406th mtg., at 143, U.N. Doc S/P 3046 (Jan. 31, 1992).

²¹³See S.C. Res. 2349 ¶ 26 S/RES/2349 (October 14, 2017) (recognizing climate change's adverse effects on water scarcity, drought, and desertification in the Lake Chad Basin region).

²¹⁴See, e.g., S.C. Res. 2408, S/RES/2408 (March 27, 2018).

²¹⁵U.N. Charter, article 39.

²¹⁶Mark Nevitt, Is Climate Change a Threat to International Peace & Security?, Michigan Journal of International Law (2021)(forthcoming).

²¹⁷Executive Order on Tackling the Climate Crisis at Home and Abroad

²¹⁹Executive Order 14013, Rebuilding and Enhancing Programs to Resettle Refugees

²²⁰Ibid.

²²¹ Ibid.

²²²U.S. National Security Strategy, 12 (2015).

223 Ibid.

²²⁴U.S. Interim National Security Strategy (Mar. 2021).

²²⁵U.S. Interim National Security Strategy, 12 (Mar. 2021).

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