



ICAS BLUE CARBON & CLIMATE CHANGE PROGRAM

QUARTERLY

Quarter 3 - 2022



ICAS BLUE CARBON & CLIMATE CHANGE PROGRAM

The ICAS Blue Carbon and Climate Change (BCCC) Program explores new policy pathways for sustainably developing the blue carbon economy and combating climate change.

The goal of this program is to establish a platform for academic exchange between experts around the world to produce tangible policy recommendations for countries to follow together. Most prominently, the program endeavors to find new pathways for multilateral engagement and mediation in areas of competition to promote mutually beneficial cooperation on climate change where possible.

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ICAS BLUE CARBON & CLIMATE CHANGE QUARTERLY

July - September 2022

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Theme of the Quarter: Global Extreme Weather

News on Global Extreme Weather

Hot Weather Sets New Records Around the Northern Hemisphere

“Record-breaking” is the key word for this summer’s scorching weather. Most parts of the Northern Hemisphere experienced an unprecedented, scorching summer during the third quarter of 2022. A “dangerous heat wave” swept across the United States from mid-July through August and put one-third of the American population under heat alerts from Arizona to New York. Temperatures of over 100°F (37.7°C) were reported in many states, breaking hundreds of temperature records which themselves were set merely a few years ago. In China, the nationwide average temperature was 1.2°C higher than the norm in August, making this summer the hottest since record-keeping started. Meanwhile, the temperature was also more than 20 °F higher than normal in France and England. And two-thirds of the European Continent—from Southern Scandinavia to the Iberian Peninsula—also suffered from unbearable heat, with one *Bloomberg* report calling it the “worst heat wave since the Renaissance.”



Of all the threats brought by extreme heat, drought stood out as the most severe. The width of the Yangtze River of China was only half its normal level, subsequently damaging the efficiency of the hydropower stations that rely on the river. Poyang Lake, China’s largest freshwater lake, dried up to a record low, as did the Netherlands’ Waal River.¹ As the demand for electricity surged due to the baking weather, the economy and even daily activities of the hydropower-dependent regions were seriously affected. Factories and malls

were forced to shut down to satisfy the need for the primary living demands of residences. Similarly, most of Europe is also facing a drought alert that endangers different sectors of the economy, from agriculture to energy to waterway transportation. Some traditional power plants were reopened to cover power shortages, which leads to soaring energy prices and even more carbon emission.

Extreme heat could also bring other serious and unexpected hazards. U.S. Public health experts warned that hot weather significantly increases the risk of dehydration and electrolyte imbalances, which can lead to a variety of serious and even lethal consequences. Heatstroke has already claimed hundreds of lives around the world this summer and the hot, dry, and windy weather has also increased concerns over wildfires in many countries. In the United States this summer, for instance, wildfires exceed the 10-year average in both frequency and size. Different levels of fire alarms were also sounded in other parts of the world, which only added to how widespread these cases of extreme heat have been.

¹ Image: Tourists walk on an ancient bridge which emerges from dried Poyang Lake on September 21, 2022 in Jiujiang, Jiangxi Province of China. The 2,657-metre-long stone bridge, which was built in the Ming Dynasty, was revealed as the water level of Poyang Lake dropped to a record low. (Photo by Fu Jianbin/VCG via Getty Images)

Main Relevant Sources:

[More Than 100 Million Americans Face Dangerous Heat Wave](#), *The Wall Street Journal*, July 20, 2022
[Historic, unforgiving Western heat wave is peaking and crushing records](#), *The Washington Post*, September 6, 2022
[China registers hottest August since records began](#), *Al Jazeera*, September 6, 2022
[Europe Is Living Through Its Worst Heat Wave Since the Renaissance](#), *Bloomberg*, September 1, 2022
[Yangtze shrinks as China's drought disrupts industry](#), *AP News*, August 19, 2022
[Climate graphic of the week: Record lows for rivers across China](#), US and Europe sap economies, *Financial Times*, August 20, 2022
[Heat Wave Sends Natural-Gas Prices Soaring](#), *The Wall Street Journal*, July 21, 2022
[Another wave of extreme heat targets Europe, prompting alerts](#), *The Washington Post*, August 9, 2022

Too Much is as Bad as too Little: Rains and Floods

Indeed, climate change creates long-term challenges, but abrupt and extreme climatic events are sometimes even more dangerous and destructive. An extremely rainy and wet period was expected under the combined influences of climate change, the scorching summer, and La Niña, but the heavy rainfall and the following deadly flood experienced in a variety of locations in the world were nonetheless astonishing. The United States experienced five 1,000-year rain events in merely five weeks, left many streets and neighborhoods underwater, and killed at least one person in Dallas. Then in late September Hurricane Ian, called one of the most severe storms in Florida's history, brought floods and power outages to most of Florida from rain and storm surges, with water depths predicted to be as high as 2.5 feet and flooding expected to extend through the Southeast coast of the U.S. Flooding followed by rain storms also hit a variety of places in the world from the Qinghai province of China to the central Italian region of Marche. Heavy rain changed rivers' courses and swept many towns and villages. From late August to early September, this year's strongest tropical cyclone of the Northern Hemisphere, Typhoon Hinnamnor, was formed over the Pacific. Although it weakened during traveling before landing in South Korea, it still claimed dozens of lives and caused significant destruction on the peninsula. Nevertheless, these incidents are dwarfed compared to the devastating floods in Pakistan.² Caused by record-breaking rains and melting glaciers in northern mountains, the flood inundated a third of the country underwater at its height. By mid-September, nearly 1,500 people were killed in this disaster and economic losses were estimated at \$30 billion. In addition to serious casualties and economic losses, infectious diseases such as malaria, dengue, and diarrhea, usually occurring after the flood retreats, are causing deadly consequences in places with insufficient medical infrastructures.



Heavy rainfall—and sometimes even flooding—are natural phenomena of summer caused by monsoons and changing seasons. However, they

² This aerial view shows a flooded residential area in Dera Allah Yar town after heavy monsoon rains in Jaffarabad district, Balochistan province on August 30, 2022. - Aid efforts ramped up across flooded Pakistan on August 30 to help tens of millions of people affected by relentless monsoon rains that have submerged a third of the country and claimed more than 1,100 lives. (Photo by Fida HUSSAIN / AFP) (Photo by FIDA HUSSAIN/AFP via Getty Images)

began to develop more and more abnormal features as they became overly extreme in recent years due to climate change. The monsoon, for instance, gathered extra power from La Niña as well as the scorching summer. In the summer, the atmosphere absorbs 7% more water every extra degree Celsius like a sponge and causes downpours when releasing its power at once. High temperatures not only intensify rainfall but also dries the land and reduce its overall water storage capacity, which is critical in mitigating floods.

Main Relevant Sources:

[Five 1,000-year rain events have struck the U.S. in five weeks. Why?](#), *The Washington Post*, August 23, 2022

[Live updates: Hurricane warning issued for South Carolina coast](#), *Axios*, September 29, 2022

[Flooding caused by heavy rain kills 16 in western China](#), *Reuters*, August 1, 2022

[South Korea Braces for Typhoon Hinnamnor](#), *The New York Times*, September 5, 2022

[Over 900 killed by Pakistan monsoon rains and floods, including 326 children](#), *CNN*, August 24, 2022

[Death toll in Pakistan floods nears 1,500; hundreds of thousands sleep in open](#), *Reuters*, September 15, 2022

[WMO predicts first “triple-dip” La Niña of the century](#), World Meteorological Organization, August 31, 2022

[Climate scientists explain Pakistan’s ‘unprecedented’ floods](#), *China Dialogue*, September 9, 2022

[Weather Whiplash: Summer Lurches From Drought to Flood](#), *US News*, August 23, 2022

Government Statements & Actions on Global Extreme Weather

On the issue of global extreme weather, governments and political figures around the world have been expressing concern for both their own citizens and of the most hard-hit places in the world. Some governments and multinational institutions have rallied support for these hard-hit locales in the form of money, food, supplies, and housing. These are some examples of some of the actions and statements that have been taken and made in the last quarter on global extreme weather.

- President Biden of the United States reiterated that climate change is a clear and present danger to the United States, noting that he will enact executive actions since Congress is not taking action.
- In his opening remarks at the 2022 Annual Research Conference, European Commissioner for Economy Paolo Gentiloni said that exploring “how to turn green the European way” is an especially timely focus because there is the continuation of a worrying trend of extreme weather caused by climate change.
- Pakistan’s Prime Minister Shehbaz Sharif said that “all hell will break loose” if the “flood-ravaged country” is not provided with debt relief and directly asked for more help from the international community.
- After visiting Pakistan, the UN Secretary-General Antonio Guterres told Pakistan’s Prime Minister Sharif that the calamity in Pakistan is “unbelievable” and he had never seen this kind of climatic situation in his life. He then appealed to the world to help Pakistan to recover from the devastation.

Some government ministries and departments have released formal actions to help reduce the negative impacts of such extreme weather, some even actively offering their aid to support other countries in need.

- U.N. agencies and several countries have sent nearly 60 planeloads of the most needed aid to Pakistan to assist the despairing country in combating the devastating flood. The United Arab Emirates is one of the most generous supporters, contributing to one-third of the direct aid.
- The Chinese government decided to channel 10 billion yuan (\$1.4 billion) from the central government reserves to support domestic drought relief efforts. The Ministry of Water Resources also ordered the release of 5.3 billion cubic meters of water from reservoirs into the Yangtze river to offset the drought.
- In early September, the Biden-Harris Administration launched the new Climate Mapping for Resilience and Adaptation portal to provide more detailed data about climate threats and also to help communities better prepare for and respond to extreme climate impacts.

- At the end of September, after Hurricane Ian hit the West coast of Florida as one of the strongest hurricanes to ever hit the area and brought devastating floods, U.S. President Joe Biden approved a major disaster declaration for the entire state of Florida following formal requests from local officials. He issued a similar disaster declaration for the state of Alaska less than a week earlier after a series of severe storms, floods, and landslides in that region.
- The 117th U.S. Congress has continued to submit and progress several legislations specifically built to counteract domestic wildfire and drought conditions as well as forest mismanagement in hopes to ultimately build up resiliency against such outcomes from extreme weather conditions.
- In the United States, Governor of California Gavin Newsom signed legislation built on the Extreme Heat Action Plan to help protect the state from health, economic, and ecological impacts due to the increasingly frequent severe heat waves.

Some government agencies offered recommendations to enrich countries' policy instruments and enhance their resilience to climate changes and subsequent extreme weather.

- UN Special Rapporteur Ian Fry has called for an international fund to be gathered to help Bangladesh to recover from extreme weather events. She said: "It is clear to me that the burden of climate change should not be carried by Bangladesh alone."
- The United States Government Accountability Office (GAO) recommends reducing federal fiscal exposure to climate change by enhancing climate resilience through pursuing opportunities related to the three guiding principles of GAO's Disaster Resilience Framework.

Relevant sources:

[FACT SHEET: President Biden's Executive Actions on Climate to Address Extreme Heat and Boost Offshore Wind](#), The White House, July 20, 2022

[Opening remarks by Commissioner Gentiloni at the 2022 Annual Research Conference](#), European Commission, September 20, 2022

[Pakistan PM says 'all hell will break loose' without debt relief](#), Al Jazeera, September 23, 2022

[FACT SHEET: Biden-Harris Administration Launches New Climate Portal to Help Communities Navigate Climate Change Impacts](#), The White House, September 8, 2022

[Action taken to counter drought](#), China Daily, September 1, 2022

[Biden issues major disaster declaration amid Ian's destruction](#), Politico, September 29, 2022

[As Record Heat Wave Continues, Governor Newsom Signs Legislation to Protect Californians from Extreme Heat](#), Office of Governor Gavin Newsom, September 9, 2022

[International aid reaches Pakistan, where floods have claimed more than 1,000 lives](#), NPR, August 29, 2022

[UN expert calls for international fund to help recovery of climate change-affected State](#), The United Nations, September 15, 2022

[Climate Change: Enhancing Federal Resilience](#), U.S. Government Accountability Office, September 12, 2022

Third-Party Analyses & Data on Global Extreme Weather

And as higher powers release statements and spread aid and recommendations, third party researchers and experts are observing the ongoing set of global extreme weather, emphasizing its unusual length and severity.

- *The Washington Post*, citing NASA data, pointed out that this summer was the hottest the world has experienced since 1880. Both NASA and NOAA also confirm that 2022 will be the eighth year in a row to be 2 degrees Fahrenheit warmer than the late 19th century.
- Both the World Meteorological Organization and the Bureau of Meteorology in Australia declared in

September that La Niña is underway for the third consecutive year, which increases the concerns of more floods and drought until early 2023.

- Climate scientist Kevin Trenberth pointed out in his World Economic Forum article that climate change has exacerbated the intensity of extreme climate disasters.
- A *New York Times* article suggests that climate change is most likely a contributor to the heat waves, wildfires, and floods, and climate change is making extreme weather conditions more likely to happen and more intense.
- The White House talks about the economic harms from extreme weather and climate events. On average, the U.S. experiences more than one disaster that has caused over a billion dollars in damages each month.

Relevant sources:

[Earth just experienced one of its warmest summers on record](#), *The Washington Post*, September 15, 2022

[Climate graphic of the week: Rare 'triple dip' La Niña threatens more floods and drought](#), *Financial Times*, September 23, 2022

[Climate change: How global warming fuelled extreme climate disasters in 2022](#), World Economic Forum, September 21, 2022

[A Summer of Climate Disasters](#), *The New York Times*, September 7, 2022

[The Rising Costs of Extreme Weather Events](#), The White House, September 1, 2022

ICAS Commentary

Protecting Blue Carbon From Extreme Weather's Destruction and For Its Mitigation

By Zhangchen Wang

September 30, 2022

The Summer of 2022, with frequent cases of extreme weather conditions around the globe, has finally come to an end as the temperature drops and the floods begin to recede across the world. With extensive reports and analyses covering the significant casualties and economic losses it has caused, extreme weather has proven its power again to everyone. Just like the damages it brought to global markets and societies, extreme conditions can be equally devastating to blue carbon ecosystems. Leaving droughts, storms, floods, and other natural disasters to ruin blue carbon sinks will only worsen climate problems and cause irreversible damage. Blue carbon plays an important role in improving climate challenges so it is essential to make sure the blue carbon sinks—like mangroves, sea grasses, krill, and salt marshes—survive extreme weather cases. Maybe in the near future, a more healthy and mature blue carbon ecosystem can even, in turn, contribute to further improving climatic conditions.

Although blue carbon sink degradation is mostly caused by direct human activities such as industrial pollutants, upstream dams, and dredging, climate change's impacts still should never be discounted as unimportant. There are many studies discussing the vulnerability of blue carbon to climate change, and it is even considered as a factor that [affects the reliability of carbon accounting for blue carbon](#). Both short-term extreme events (like storms and drought) and long-term climatic changes (such as marine heatwaves and sea levels rising) bring existential threats to the blue carbon ecosystem. Episodic extreme high temperatures—in other words, short but unbearably hot summers—can bring lethal consequences to

seagrasses. Mangroves might be more resilient to high temperatures in comparison, but they still cannot survive if heat causes drought. [Wind and waves](#) brought by climate change may pose a direct threat to the blue carbon ecosystem by physically damaging or even destroying them. Thus, if we leave extreme weather to wreak havoc, the future outlook for healthy blue carbon sinks will be more and more pessimistic.



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In addition, allowing blue carbon sinks to be destroyed not only damages the ecosystem but also [turns a carbon sink into a carbon source](#). Blue carbon stores carbon by capturing CO₂ from the environment and stores the carbon in the plants and soils. [According to IPCC](#), the carbon storage capacity of blue carbon can be up to 1,000 tC ha⁻¹, which is disproportionately higher than most terrestrial ecosystems, and carbon emission is known to contribute to the uptick in global extreme weather. However, blue carbon's function as a carbon sink will be destroyed once the blue carbon sinks themselves are destroyed. Once destroyed, it will release all the carbon stored in itself from across the years into the atmosphere. The carbon released from blue carbon degradation is comparable to the annual CO₂ emission of many small countries. Carbon is a leading contributor to violent global warming and climate change, which also means extra power in creating the next round of global extreme weather. Such a vicious cycle needs to be prevented.

Although still seen as a very novel idea to many stakeholders and scientists, blue carbon is proving itself to be [a very positive player](#) in current climate change mitigation. Aside from its carbon storage capacity, blue carbon sinks can also bring immediate benefits under the current climatic conditions with frequent extreme weather. The global community needs to realize that, although the role of blue carbon sinks in improving climate change is currently difficult to observe or quantify, it has already become an important defense line against extreme weather conditions. For example, nature-based coastlines offer an extra line of protection when severe weather hits. A [research conducted by The Nature Conservancy](#) points out that coastal wetlands helped in protecting millions of people from storms, flooding, and other climate-related risks, and

³ An aerial view of a destroyed mangrove ecosystem in Belize, South America following a major storm. (Source: Getty Images, Royalty-Free)

can save communities hundreds of millions of dollars [by reducing flood damage by up to 29%](#).

As mentioned previously, blue carbon sinks themselves face enormous challenges from extreme weather when protecting us. Although it is difficult to find effective measures that can immediately and evidently mitigate the negative impacts of extreme climate, researchers and policymakers should actively look for solutions to defend blue carbon sinks against unfavorable conditions; even such approaches might be beyond its financial means in the short term. It is important to first note that the protection of any kind of natural environment should not be determined by merely economic outcomes, and blue carbon and blue carbon sinks are as essential to our planet as any other natural environment.

However, aside from other secondary factors like economical concerns that affect decision-making, the more serious issue that must be recognized is the considerable knowledge gap on how to specifically protect blue carbon sinks. Most scientific research on blue carbon has focused on its carbon stock capability and its role in mitigating climate change. Researchers are aware of the vulnerability of blue carbon in front of extreme weather conditions, but at this stage, there is little research on how to protect blue carbon from destruction in extreme weather conditions. To prevent the natural environment from irreversible damage, human intervention should be executed timely and decisively when the destructive power of the extreme weather far exceeds the self-healing ability of the ecosystem. For example, the [Niubeiliang National Nature Reserve of Shaanxi](#), China, has a developed system that offers different protection schemes to different species in the case of global warming caused by extreme weather conditions. Current research on blue carbon is insufficient to establish a similarly effective mechanism for human intervention programs under extreme weather conditions. Scientists and policy makers need to find out a plan for blue carbon and blue carbon stocks as soon as possible to prepare for the next wave of extreme weather that will inevitably come again.

If we can find a set of effective solutions, policies and protocols related to blue carbon sinks in the cases of extreme weather, the benefits will certainly not let us down. While sometimes difficult to identify in the short-term, their strong carbon storage capacity will definitely make a firm contribution to improving climate change and also to mitigating abnormal extreme weather in the future. Conversely, the consequences of failing to protect blue carbon sinks from both natural and manmade degradation would be something that none of us would like to see.

This commentary was originally [released](#) on the ICAS website on September 30, 2022 as part of the ICAS Blue Carbon & Climate Change (BCCC) Program.

This season's Theme of the Quarter on Global Extreme Weather was primarily researched and written by Zhangchen Wang, Blue Carbon & Climate Change Program Intern Assistant at the Institute for China-America Studies.

This Season's Global Climate Affairs

Issues & Updates on Blue Carbon

IUCN & Blue Forest launch New Blue Carbon Partnership

Saturday, July 2

Source: [EIN Presswire](#); [IUCN](#)

[Portugal]

By signing a new memorandum of understanding (MOU), the International Union for Conservation of Nature and Blue Forest Company instigated the New Blue Carbon Partnership, which is designed to accelerate ocean conservation and regenerative economic development in the Western Indian Ocean. It is substantial to the restoration and preservation of mangrove forests.

The Bahamas parliament aims to launch the first blue carbon credit

Saturday, July 2

Source: [Bahamas Chronicle](#)

[The Bahamas]

The Bahamas government believes it can launch the first blue carbon credit from Bahamian sea grass before the end of 2022 through the Climate Change and Carbon Markets Initiative Bill. It also expects to launch the Bahamas's first carbon exchange through cryptocurrency exchange FTX.

First-of-its-kind freshwater mangroves have been discovered in Brazil's Amazon Delta

Wednesday, July 20

Source: [Mongabay](#)

[South America]

While on an expedition in the Amazon River Delta, researchers found mangroves growing in freshwater; an unheard-of circumstance. This discovery, which had been overlooked by previous mapping and satellite projects, is about 70 square miles in size and increases the known area of mangroves in the region by 20%.

The Sunshine Coast Council of Australia receives multi-million dollar Blue Carbon grant

Thursday, July 28

Source: [Sunshine Coast](#)

[Australia]

The Blue Heart project that aims for blue carbon ecosystem restoration received a \$2 million grant and also an additional \$1.5 million provided by partners. As one of the five successful Blue Carbon restoration projects the Federal Government was supporting in Australia, the Blue Heart will make further contributions to Blue Carbon ecosystems.

U.S. \$200,000 Mangrove Seedling Project Started in Ghana

Monday, August 15

Source: [allAfrica](#)

[Ghana]

The “AFR100 TerraMatch project” spearheaded by Hen Mpoano, a NGO that supports coastal communities to promote and sustain integrated management of coastal and marine ecosystems, aims to replant 200,000 mangrove seedlings in degraded sites within the Greater Amanzule Wetland complex in Western Ghana.

Seychelles’ seagrass meadows mapped

Tuesday, August 16

Source: [Seychelles News Agency](#)

[Seychelles]

After a two-year mapping exercise around the main islands, the Seychelles Conservation and Climate Adaption Trust (SeyCCAT) revealed three maps of seagrass meadows. With the maps, policymakers, planners, and other involved parties of Blue Economy now have better data collected regarding the Seychelles’ submarine meadows and terrain.

Coastal resilience is the theme of the 2022 edition of Mediterranean Coast Day

Monday, August 29

Source: [UN Environment Programme](#)

[Morocco, Mediterranean]

This year’s Mediterranean Coast Day chooses to focus on coastal resilience because the impact of climate change and environmental degradation in the Mediterranean are becoming ominously clear. Coastal areas are not only vulnerable and critical natural habitats but also the foundation of the Mediterranean blue economy that creates millions of jobs.

Indonesia unveils newfangled strategies in blue economy at G20 event

Tuesday, September 6

Source: [Antaranews](#)

[Indonesia]

The Maritime Affairs and Fisheries Ministry of Indonesia introduced three blue economic strategies and action plans at the G20 event, aimed at expanding conservation areas and managing marine debris and spatial planning of marine, coastal, and small islands to protect coastal resources and small islands from damages caused by economic activities.

Multilateral Affairs & Climate Diplomacy

U.S.-China Diplomatic Breakdown Casts a Shadow on Climate Protection

The Short Story: China suspended the bilateral climate talk with the U.S. as one of the many retaliatory responses to Pelosi's visit to Taiwan.

Why It Matters: Climate change is currently one of the few areas of cooperation between the two nations. China and the U.S. are also the two largest greenhouse gas emitters in the world. The breakdown of such cooperation could make the outlook for the United Nations Climate Change Conference (COP27), which is set for this November, even more bleak.

The Full Feature Story:

In response to the U.S. House of Representatives Speaker Nancy Pelosi's visit to Taiwan on August 2, China cut off the bilateral talk and relevant cooperation with the United States on climate change. China claimed that the visit was a violation of Chinese sovereignty. Analysts from both sides agree that cooperation is unlikely to resume in the near future, despite recent urgings by the U.S. Ambassador to China Nicholas Burns, and some also fear that the current suspension of connection between higher-level officials might expand to all levels of communication and cooperation on climate issues between the two countries. U.S. Special Envoy on Climate Change John Kerry argues that "suspending cooperation doesn't punish the United States – it punishes the world, particularly the developing world." The new situation is a negative sign for the COP27 summit as well, which might turn the global climate summit into a political competition rather than a cooperative gathering amidst this hostile environment.

The good news is that neither side plans to stop individually slashing their emissions despite this diplomatic breakdown. Both China and the United States will continue to work towards their respective carbon neutrality goals. China will stick to the promise of becoming a carbon neutral country by 2060, and this will continue to be an important domestic policy of China despite the changes on the international level. The U.S. Congress also passed the Inflation Reduction Act in mid-August, which aims to reduce greenhouse emissions. In fact, there are also analysts who argue that instead of cooperation, "a little healthy competition between the two superpowers might actually benefit the planet."

Sources:

[U.S.-China diplomatic breakdown clouds outlook for global climate progress](#), Reuters, August 5, 2022
[US Urges China to Resume Talks Ended After Pelosi Went to Taiwan](#), Bloomberg, September 29, 2022
[China's suspension of bilateral climate talks with U.S. 'punishes the world,' Kerry says](#), Reuters, August 5, 2022
[On China, US and climate, action, not talk is key](#), AP News, August 6, 2022
[Will a freeze in US-China climate talks threaten global action?](#), Nature, August 11, 2022
[How China's suspension of talks with the US can hurt climate-change targets](#), South China Morning Post, August 12, 2022
[5 things to know about the suspension of U.S.-China climate talks](#), The Washington Post, August 24, 2022

More on Multilateral Affairs & Climate Diplomacy:

- Indonesia offers tax incentives to manufacturers to stimulate the country to shift towards electric vehicles, and Chinese EV manufacturers aim to take advantage of this ambition. ([Nikkei Asia](#), July 22)

- The ports of Singapore and Rotterdam seek to realize the first sustainable vessels sailing on the route, which is also what they claimed as “the world’s longest green corridor for shipping,” by 2027. ([gCaptain](#), August 2)
- Germany and Canada signed a five-year hydrogen accord and Canada intends to start shipping green hydrogen to Germany by 2025, taking the first step to help Germany reduce its fossil fuel consumption. ([Bloomberg](#), August 23)
- The United Nations ICG5 finished a fifth session of negotiation on a potential Biodiversity Beyond National Jurisdiction (BBNJ) treaty, with limited progress and deliverables. ([The Nature Conservancy](#), August 27)
- The G20 ministers gathered in Indonesia to discuss their progress on curbing carbon emissions, but the expectations are low due to the recent energy crisis. ([CNBC](#), August 31)

Domestic Activity & Climate Affairs

Inflation Reduction Act Signed into Law

Country/Region: The United States

The Short Story: The U.S. Inflation Reduction Act was signed into law by President Joe Biden on August 16, 2022.

Why It Matters: The Act offers significant tax credit, rebate and incentives to lower clean energy costs, support electric vehicles, reduce greenhouse gas emissions and strengthen resilience against climate changes.

The Full Feature Story:

A revised version of the Build Back Better Act, the Inflation Reduction Act aims to “lower costs for families, combat the climate crisis, reduce the deficit, and finally ask the largest corporations to pay their fair share.” The Act is estimated to invest \$386 billion in the next ten years in Energy and Climate, including through tax credits on clean electricity, clean manufacturing, clean fuel and vehicle as well as funding for clean energy, conservation and energy efficiency. According to the Democratic Senate Leadership, the bill will reduce U.S. carbon emissions by roughly 40% by 2030 and lower energy bills by \$500-\$1,000 annually.

While Democrats celebrate the passage of the Inflation Reduction Act, Republicans have opposed the Act for increasing government spending and for spending on the environment. Meanwhile, analysts estimated that the Act will increase overall costs for corporations, but reduce their costs for achieving net zero carbon targets. Following the passage of the Act, First Solar, the United States’ largest solar panel manufacturer, announced plans to establish a new solar panel manufacturing plant in the United States.

International Reactions:

One unanticipated reaction from the global community is the Act’s impact on imports. The European Union and South Korea claim that the Inflation Reduction Act could discriminate against foreign producers in providing tax credits only to electric vehicles assembled in North America. Accordingly, government agencies and industrial associations of the two are seeking to jointly address their concerns with the U.S. Inflation Reduction Act. South Korea is also considering filing a complaint at the World Trade Organization.

Sources:

[Summary: The Inflation Reduction Act of 2022](#), Senate Democratic Leadership, August 11, 2022
[BY THE NUMBERS: The Inflation Reduction Act](#), The White House, August 15, 2022
[First look: GOP's opening salvo against Inflation Reduction Act](#), Axios, August 19, 2022
[S.Korea seeks cooperation with EU over U.S. Inflation Reduction Act](#), Reuters, August 24, 2022
[First Solar announces new U.S. panel factory following the Inflation Reduction Act](#), CNBC, August 30, 2022
[How the Inflation Reduction Act affects corporate net zero goals, according to BofA](#), Yahoo Finance, August 30, 2022

Positive Movements Towards Climate Protection in the Private Sector**Country/Region:** Global**The Short Story:** Private enterprises and individuals are starting to fight climate change in interesting ways.**Why It Matters:** Fighting climate change and curbing carbon emission is not just the responsibility of the state and its leadership, but requires the joint efforts and devotion of the whole society. The private sector is now showing increased signs of contributing to the solution of climate issues.**The Full Feature Story:**

The participants in fighting against climate change range from individual environmental activists from a small city in Zibo to industry giants like Samsung and Shell. Although their breadth of influence is significantly different, they share the same end goal: raise awareness and bring progress to climate issues. Indian billionaire Gautam Adani, the third-richest person in the world, plans a \$70 billion “green push” to shift the world towards clean energy. He intends to build major facilities to manufacture electrolyzers to make green hydrogen, wind power turbines, and solar panels that can eventually help to replace fossil fuels. In comparison, “Nut Brother” is a performance artist from China who attracts the public to pay attention to environmental pollution problems by uploading humorous and creative videos to the internet. His videos were viewed by millions of people online and were also recognized by local governments who then paid more attention to water pollution.

Several companies have also displayed their ambitions to reverse climate change trends. Climate Club, an organization focusing on helping large companies engage their employees to reach climate goals, is now helping employees of Facebook and Bain to track their contribution to climate change. The South Korean tech giant Samsung Electronics also announced its new environmental strategy. It is committed to achieving net zero carbon emission through a two-step plan by 2050, and it will offer more energy- and resource-efficient products to its consumers for more sustainable living. Even the oil giants have openly said they want to explore the carbon capture and storage (CCS) strategy. Although the efficiency and feasibility of these plans are still questionable, they are nonetheless an ambitious and positive step forward.

Sources:

[Billionaire Adani Adds More Detail on \\$70 Billion Green Push](#), Bloomberg, September 7, 2022
[Chinese artist stirs climate action with toxic soup and rock music](#), *The Japan Times*, July 16, 2022
[Facebook and Bain have a new tool to help employees track their contributions to climate change](#), CNBC, September 28, 2022
[Samsung Electronics Announces New Environmental Strategy](#), Samsung Newsroom, September 15, 2022

[Oil giant Shell is leading the way on this \\$4 trillion climate change solution some say won't work](#), *Fortune*, September 26, 2022

More on Domestic Activity & Climate Affairs:

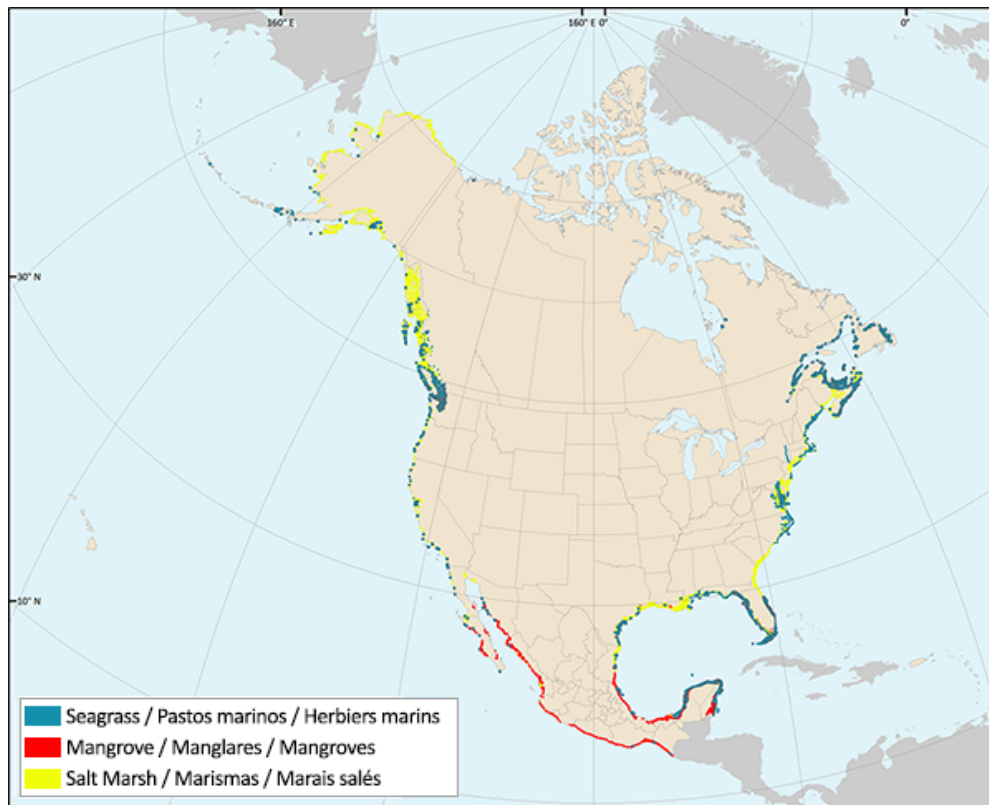
- **Japan:** Prime Minister Fumio Kishida of Japan established a new “green transformation” panel and seeks to restart Japan’s nuclear power reactors. He believes nuclear power is indispensable for stopping reliance on fossil fuel. ([The Japan Times](#), July 28)
- **The United Kingdom:** The Competition and Market Authority of the U.K. started a probe into three fashion brands, Asos Plc, Boohoo Group Plc, and George at Asda, over “greenwashing” concerns against them. ([Bloomberg](#), July 29)
- **Australia:** The Lower House of Parliament of Australia passed a bill that aims to reduce at least 43 percent of carbon emissions from 2005 levels by 2030, and reach net zero by 2050. ([The New York Times](#), August 4)
- **The United States:** California will seek to install 5 gigawatts of turbines off the Pacific coast by 2030, and five times more by 2045, as a key part of the plan to get all its electricity from carbon-free sources by 2045. ([Bloomberg](#), August 10)
- **China:** The Shanghai Stock Exchange of China raised the required proceeds from green bond issuances to be invested in green projects from 70% to 100% to adopt global standards and eliminate greenwashing. ([Reuters](#), August 24)
- **The United States:** President Biden promoted two new faces into his top climate team as he races to implement a major climate law and several key regulations before the end of his first term. ([The Washington Post](#), September 2)
- **China:** China’s Ministry of Natural Resources published the draft of “Guidelines for impact assessment of anthropogenic underwater noise on marine animal” to provide further instructions for the conservation of marine biodiversity. ([Ministry of Natural Resources of PRC](#), August)

Blue Carbon Country Profile: The United States

A. Potential of United States in Blue Carbon Affairs

With 95,471 miles of shorelines in total, the United States of America has an abundance and variety of blue carbon resources. All kinds of coastal blue carbon resources—mangroves, salt marshes and seagrasses—can be found within the territory of the United States.

- Mapped area of sea grasses (2016): 14,352 km²
- Mapped area of tidal salt marsh (2016): 12,775 km²
- Mapped area of mangrove (in conterminous United States) (2015): 2,513 km²
- Key Institutions of Study on Blue Carbon resources: National Oceanic and Atmospheric Administration (NOAA)
- Key Regions of Interest: The Gulf Coast; Florida Everglades
- More Information:
 - [Blue carbon distribution](#), 2019-2020, ArcGIS map.
 - [NOAA Study on Sea Marshes Resilience](#).⁴



Projects conducted and/or sponsored by NOAA and other U.S. agencies have produced a fair amount of record on the presence of domestic, coastal blue carbon ecosystems. Nevertheless, since the ecosystems are constantly changing—partly due to climate change consequences, conservation works and impacts of other human activities—additional efforts are always needed to catalog the latest condition of the coastal and specifically the coastal blue carbon ecosystems.

⁴ Image: The distribution of blue carbon resources in North America. Source: Commission for Environmental Cooperation, <http://www.cec.org/north-american-environmental-atlas/north-american-blue-carbon-2021/>.

Especially in the last decade, the United States has collected significant data and technical knowledge in the study of the blue carbon resources. Since 2017, the U.S. Environmental Protection Agency (EPA) has included coastal wetlands in its annual Inventory of U.S. Greenhouse Gas Emissions and Sinks; a comprehensive accounting of the United States' total greenhouse gas emissions from all human-generated sources. In-depth programs have also been conducted in places such as the Pacific Northwest and the North Atlantic region in order to get a better understanding of the local ecosystem, to develop the best method to measure the carbon dioxide and methane exchange within the coastal blue carbon ecosystems, as well as to encourage the inclusion of coastal wetlands into the carbon market and climate financing mechanisms.

B. Domestic Government Actions and Activities on Blue Carbon in the United States

National Legislations

Currently, there is no federal legislation that directly speaks to blue carbon. However, Congress has provided funding for some agencies to mitigate climate change and build extreme weather resilience, including through recent legislations such as the Inflation Reduction Act and the Infrastructure Investment and Jobs Act. With a variety of government agencies and programs dedicated to ecosystem conservation, climate resilience, and specifically carbon storage and sequestration, it is to be expected that part of these appropriated resources and funding will find their way into blue carbon research and restoration projects.

National Agencies and Government Actions

- **Executive branch strategy:** The United States has not published any whole-of-the-administration level strategy or planning on blue carbon. However, the concept of blue carbon is widely present in climate and sustainability strategies published by the Biden administration; either as an innovative method to mitigate climate change and its consequences, or as a solution to ensure the sustainable management of ocean and coastal resources.
 - *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* (November 2021) aims to make sure that blue carbon is part of the toolbox to achieve the U.S.'s net-zero GHG emission goal.
 - *Opportunities and Actions for Ocean Science and Technology (2022-2028)* includes plans to increase science and technology input to “explore implementation of blue carbon solutions” as a way to address climate change.
 - Ocean Policy Committee's *2022-2023 Action Plan Summary* includes an assessment of current and planned agency mitigation and adaptation activities in a number of sectors, including in blue carbon.
- **Works by federal agencies:** A number of federal agencies have developed programs to support blue carbon as well as wetland conservation and restoration. Notable cases include:
 - NOAA's land cover program ensures that blue carbon is included in the U.S. greenhouse gas emissions inventory.
 - NOAA's National Estuarine Research Reserves has been working with partners to establish blue carbon financial markets in support of wetland conservation and restoration projects and helped develop blue carbon measurement standards.
 - NOAA has been funding research and monitoring efforts on blue carbon storage.
 - NOAA has also supported educational events to raise awareness of blue carbon.

- The USGS works with partner organizations on a number of blue carbon projects which collect, analyze, and synthesize data in order to improve estimates of coastal wetland carbon fluxes.
- NASA and USGS manage the National Blue Carbon Monitoring System project to better evaluate and estimate coastal wetland carbon stocks and fluxes, using nationally available datasets, finer scale satellite and field derived data.
- National reserves such as Waquoit Bay Research Reserve and Mission-Aransas Research Reserve have also partnered with other federal agencies to support their blue carbon works.

Local Government Actions

- Given that much of the conservation and climate change resilience work is conducted on the state and local levels, local governments have and must get involved with blue carbon research and coastal wetland conservation projects.
- On August 4, 2021, the Oregon Global Warming Commission acknowledged the carbon sequestration benefits of coastal habitats (i.e. blue carbon) in its climate plan.
- U.S. states run a variety of programs to protect their coastal regions, including zoning limitations, state-level marine protected areas (MPAs) and coastal management programs. Although these programs don't often explicitly mention blue carbon, the protection of related wetland ecosystems helps secure blue carbon benefits.
 - NOAA's summary of state-level coastal management programs: [Coast.NOAA.gov/czm/mystate/](https://www.noaa.gov/coastal-management)
 - An example of a state-level Department of Environmental Protection: [FloridaDEP.gov](https://www.floridadep.gov)

C. Private, Commercial Third-Party Research & Projects

Private Corporations and Investment Groups

- Despite talks about green financing and the corporations' responsibility in combating climate change, there is a limited number of U.S. private corporations and investment groups that specifically get involved in blue carbon projects. Blue carbon research projects are typically funded by federal agencies while coastal restoration and conservation projects are typically supported by environmental groups, federal agencies, local governments and academic institutions.
- Environmental consultants are present in some projects, such as in the Sacramento-San Joaquin Delta's wetland resilience project and Snohomish Estuary's Blue Carbon project. These consultants are likely employed by the above-mentioned parties for their technical expertise.

Universities and Research Institutes

Researchers, universities and other research institutions have been active supporters of U.S. blue carbon research and restoration projects. Apart from developing technical knowledge, researchers and institutes have joined government agencies to carry out major blue carbon projects. Some examples include:

- Duke University's Nicholas Institute for Energy, Environment & Sustainability runs a Coastal Blue Carbon project and has helped map blue carbon in places like North Carolina, develop North Carolina's Blue economy, and finance the restoration and conservation of mangroves in West Africa.
- The Florida Coastal Everglades (FCE) LTER Program, based at Florida International University's Institute of Environment, has hosted researchers, students and educators from multiple universities

and partners to examine the intersection between climate change and coastal ecosystems, including through a 2012 investigation into blue carbon stored in seagrasses.

NGOs and Non-Profit Organizations

NGOs and non-profit organizations have played a significant role in blue carbon-related works in the United States by raising awareness of blue carbon, working with government and intergovernmental agencies to assess blue carbon benefits, and conducting independent projects to restore and conserve the coastal ecosystem. Some examples of their typical work includes:

- Conservation International, partnering with UNESCO's Intergovernmental Oceanographic Commission and IUCN, launched the Blue Carbon Initiative, a global program working to mitigate climate change through blue carbon works.
- The Blue Carbon National Working Group, created in 2015 to coordinate blue carbon policy discussions among private and public stakeholders, had held two rounds of meetings. Each meeting produced priority recommendations to advance blue carbon nationally and incentivize further work.
- Restore America's Estuaries is heavily involved in raising awareness of blue carbon benefits, presenting and sharing blue carbon researches, working with U.S. agencies to conduct blue carbon projects as well as presenting blue carbon conservation methodology to have it be included in carbon and climate mitigation measurement systems.
- The Pew Trust has recently launched the Blue Carbon Network to provide a platform for academic and research exchanges among experts and state officials and for information and know-how sharing among local, state and national partners.

D. Public, Governmental International Engagements on Blue Carbon

Treaties & Agreements

- The U.S. has yet to sign any treaties that directly mentions blue carbon.
- Since the U.S. rejoined the Paris Agreement in February 2021, the United States has again committed to meeting the treaty's goals to limit global warming and to meet its nationally determined contribution. This commitment may expand to blue carbon since blue carbon is incorporated into the U.S. EPA inventory and could also play a role in mitigating global warming.

Statements at International Conferences

- The NOAA Blue Carbon Inventory Project was endorsed as a Decade Action as part of the United Nations Decade of Ocean Science for Sustainable Development at the 2021 United Nations Climate Change Conference (COP 26) in Glasgow.
- NOAA's projects on island resilience and coastal blue carbon were presented and highlighted during the 2021 UN Climate Change Conference (COP26).
- In April 2022, the U.S. co-hosted the seventh Our Ocean Conference with Palau, where the U.S. made verbal commitments concerning issues such as sustainable blue economies and marine protected areas.

Cross-Border Joint Projects & Partnerships

- The Biden administration has committed to making sure that promising "ocean-climate solutions," including blue carbon, is taken into consideration when the U.S. develops its ocean policy, especially as

the U.S. works with global allies on the climate crisis and ocean economy.

- The NOAA Blue Carbon Inventory Project was launched in 2021 with the aim to ensure that blue carbon is included in the preparation of national greenhouse gas inventories (NGGI) in accordance with the latest applicable guidelines in select developing countries.
- NOAA and USAID work with partners in Southeast Asia to support capacity building for improved management of coastal ecosystems, including those critical to blue carbon (i.e. mangroves and seagrass) and vulnerable to climate change (i.e. fisheries and coral reefs). On November 3, 2021, for instance, USAID has further announced plans to support Indonesia, in part in better management and conservation of its peatland.

E. Keeping An Eye On...

With abundant blue carbon resources domestically and cross-border partnership networks on ecosystem conservation, the United States has gathered significant experience and technical knowledge in the measurement of blue carbon resources, the assessment of blue carbon benefits, as well as the conservation and restoration of blue carbon ecosystems. Furthermore, federal agencies such as USGS and NOAA consistently gather and manage blue carbon-related data nationwide and in cross-border projects. This data has allowed for further and in-depth research and analysis in the field of climate change mitigation and blue carbon works.

At the same time, there lacks a comprehensive national strategy or planning on blue carbon research and projects. Despite the significant experience in coastal blue carbon measurement, limited efforts have been focused on exploring other blue carbon benefits and possibilities (e.g. deep-sea blue carbon and blue carbon economy)—let alone coordinating these research and exploration efforts. Having such a gap exist between strategy and capacity can compromise or slow down progress in blue carbon and climate work. At the moment, the lone legislative draft that attempts to address this gap is the “Blue Carbon for Our Planet Act.” It remains to be seen whether this proposal can translate into a partial or satisfying solution to the gap.

Main Sources & Expanded Reading

[About Coastal Wetlands](#), United States Environmental Protection Agency, last visited September 30, 2022

[North America’s Blue Carbon: Assessing Seagrass, Salt Marsh and Mangrove Distribution and Carbon Sinks](#), Commission for Environmental Cooperation, February 2, 2016

[Is the Geographic Range of Mangrove Forests in the Conterminous United States Really Expanding?](#), by Chandra Giri, and Jordan Long, *Sensors* (online), November 28, 2016, doi: 10.3390/s16122010.

[Pacific Northwest Carbon Stocks and Blue Carbon Database Project](#), National Estuarine Research Reserve System Science Collaborative, last visited September 30, 2022

[The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050](#), United States Department of State and the United States Executive Office of the President, November 2021

[Opportunities and Actions for Ocean Science and Technology \(2022-2028\)](#), National Science & Technology Council, March 2022

[Ocean Policy Committee 2022-2023 Action Plan Summary](#), Ocean Policy Committee, July 1, 2022

[NOAA Blue Carbon Enterprises Lessen Climate Change Damage](#), NOAA Office for Coastal Management, last visited September 30, 2022

[Coastal Blue Carbon](#), National Ocean Service, National Oceanic and Atmospheric Administration, last visited September 30, 2022

[Blue Carbon](#), NOAA Office for Coastal Management, last visited September 30, 2022

[USGS Blue Carbon Projects](#), USGS Water Resources, August 12, 2020

[NASA-USGS National Blue Carbon Monitoring System](#), USGS Water Resources, March 2, 2019

[PROJECT Coastal Blue Carbon](#), Nicholas Institute for Energy, Environment & Sustainability, last visited September 30, 2022

[Blue Carbon Stored in Seagrass](#), Florida Coastal Everglades LTER, 2012

[About the Blue Carbon Initiative](#), the Blue Carbon Initiative, last visited September 30, 2022

[Blue Carbon National Working Group](#), Restore America's Estuaries, last visited September 30, 2022

[Coastal Blue Carbon](#), Restore America's Estuaries, last visited September 30, 2022

[Pew Launches Blue Carbon Network to Help States Address Climate Change](#), Pew Trust, April 29, 2022

[CPO Produces NOAA Blue Carbon Inventory Project Briefing Sheet](#), NOAA Climate Program Office, April 27, 2021

[In Case You Missed It: Biden-Harris Administration Works with Global Partners to Drive Ocean Action to Combat the Climate Crisis and Boost Ocean Economy at UN Ocean Conference](#), White House press release, July 1, 2022

[NOAA Climate Program Office's International Adaptation Partnerships Highlighted at COP26](#), NOAA Climate Program Office, November 12, 2021

[USAID Announces Major Programs to Conserve Critical Carbon Sinks](#), USAID, November 3, 2021

This season's Blue Carbon Country Profile on the United States was primarily researched and written by Amanda Jin, Research Assistant Intern at the Institute for China-America Studies.

Scientific Research and Beyond

Scientific Research Results & Releases

July 2022

- Report: [The State of Mangroves in the Western Indian Ocean](#), *Wetlands International* (July 2022)
- Journal Article: [Carbon Removal Using Coastal Blue Carbon Ecosystems Is Uncertain and Unreliable, With Questionable Climatic Cost-Effectiveness](#), *Frontiers in Climate* (July 28, 2022)

August 2022

- Journal Article: [Carbon accumulation rates are highest at young and expanding salt marsh edges](#), *Communications Earth & Environment* Vol. 3 (2022), via *Nature* (August 2, 2022)
- Journal Article Review: [Social equity is key to sustainable ocean governance](#), *npj Ocean Sustainability* 1 (2022), in *Nature* (August 10, 2022)
- Journal Article Briefing: [Boreal forest on the move](#), *Nature* Vol. 608 (pg 546–551) (2022), in *Nature* (August 10, 2022)
- Journal Article: [A climate risk index for marine life](#), *Nature Climate Change* Vol. 12 (pg 854–862) (2022) (August 22, 2022)
- Journal Article: [How to Incorporate Blue Carbon into the China Certified Emission Reductions Scheme: Legal and Policy Perspectives](#), *Sustainability* Vol. 14, No. 17 (August 2022)
- Working Paper: [Green energy depends on critical minerals. Who controls the supply chains?](#), Peterson Institute for International Economics 22-12 (August 2022)

September 2022

- Interactive: [Mapping the wonders of the underwater world](#), China Dialogue Ocean (September 5, 2022)
- Journal Article: [How can blue carbon burial in seagrass meadows increase long-term, net sequestration of carbon? A critical review](#), *Environmental Research Letters* Vol. 17, No. 9 (September 7, 2022)
- Journal Article: [The Carbon Sink of Mangrove Ecological Restoration between 1988–2020 in Qinglan Bay, Hainan Island, China](#), *Forests* Vol. 13, No. 10 (September 22, 2022)
- Journal Article: [A critical review of the life cycle climate impact in seaweed value chains to support carbon accounting and blue carbon financing](#), *Cleaner Environmental Systems* Vol. 6 (September 2022)
- Journal Article: [Forest Structure and Allometric Models for Carbon Estimation of the Dominant Mangrove Species in Letkhokkon Area, Myanmar](#), via SSRN (September 15, 2022)
- PhD Dissertation: [Scotland's blue carbon: the contribution from seaweed detritus](#), Scottish Association for Marine Science (September 2022)
- Report: [Climate Finance Provided and Mobilised by Developed Countries in 2016-2020. Organisation for Economic Co-operation and Development](#) (September 22, 2022) [In French]

Major Government Statements & Actions

Key Government Speeches on Climate Issues

- July 2, U.S. White House: [“Climate Envoy John Kerry Gives a Speech on Climate Issues”](#)
- July 14, United Kingdom Cabinet: [“We have to act now to put the world on the path to a more sustainable future”](#)
- July 18, Government of Germany: [“Speech by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, at the 13th Petersberg Climate Dialogue”](#)
- July 20, U.S. White House: [“Remarks by President Biden on Actions to Tackle the Climate Crisis”](#)

- August 2, Government of Singapore: [“Keynote Address by Minister in the Prime Minister’s Office, and Second Minister for Finance and National Development Indranee Rajah at the World Cities Summit 2022 Closing Plenary”](#)
- August 8, Government of Indonesia: [“Indonesia Encourages the World to Develop Blue Carbon Ecosystem”](#)
- August 28, United Kingdom Chamber of Commerce: [“Boris Johnson tells party ‘not to give up on green energy’”](#)
- August 27, U.S. Department of State: [“Establishing an Ambassador-at-Large for the Arctic Region”](#)
- September 6, U.S. Congress: [“Letter to Climate Admin Officials on Justice40”](#)
- September 6, Government of the Netherlands: [“Speech by Dutch finance minister Sigrid Kaag at the session on ‘ensuring investments into climate mitigation and the macroeconomic implications’ at the Bruegel Annual Meeting, Brussels, 6 September 2022”](#)
- September 20, United Nations: [“Secretary-General’s video message to Countdown to COP15: Leaders Event for a Nature-Positive World”](#)
- September 20, Government of the Philippines: [“FULL TEXT: President Marcos’ speech at the 77th UN General Assembly”](#)
- September 21, Egypt State Information Service: [“President El-Sisi’s Speech at the Closed Meeting of Heads of State and Government on Climate Change”](#)
- September 23, European Commission: [“Speech by Commissioner Schmit at the Global Clean Energy Action Forum event ‘Social & climate justice @ CEM in challenging times: Moving to the next level’”](#)
- September 27, U.S. Department of the Treasury: [“Remarks by Secretary of the Treasury Janet L. Yellen at Cypress Creek Renewables in North Carolina”](#)

Government Reports & Regulations on Climate Issues

- August 2022: China’s Deputy Director of the National Climate Center Xiao Chan [said](#) at a news conference that the comprehensive intensity of the high temperatures faced this year is the third strongest since 1961, weaker only to numbers from 2013 and 2017.
- August 3: The China Meteorological Administration [released](#) the Blue Book on Climate Change in China (2022), which identifies numerous trends in past and predictions for upcoming precipitation, surface temperatures and water levels, and how these trends might impact China.
- September 21: The U.S. Senate voted 69-27 to [approve](#) the Kigali Amendment, the fifth amendment of the global 1987 Montreal Protocol treaty that plans to phase out the world’s use of hydrofluorocarbons, born from the gathering of world leaders at the United Nations Headquarters in New York.

Government Hearings & Meetings on Climate Issues

- July 20, U.S. Congress: [Panel on the State of Climate Protection in the Greater Midwest Oil Scheme](#)
- September 5, Parliament of Australia: Introduction of the Environment Protection and Biodiversity Conservation Amendment (Climate Trigger) Bill 2022 [\[House\]](#) [\[Senate\]](#)
- September 20, U.S. Congress: [House Committee Hearing on Amplifying the Arctic: Strengthening Science to Respond to a Rapidly Changing Arctic](#)
- September 21, United Nations General Assembly: [Informal Leaders’ Roundtable on Climate Action](#)
- September 23, United Nations General Assembly: [Security Council Open Debate on Climate and Security](#)
- September 29, U.S. Congress: [House Committee Hearing on A Big Climate Deal: Lowering Costs, Creating Jobs, and Reducing Pollution with the Inflation Reduction Act](#)

Cross-National Meetings & Engagements on Climate Issues

- June 27-July 1, United Nations: The [UN Ocean Conference](#) was held in person in Lisbon, Portugal.
- August 28-September 6, United States: Ahead of the 27th Conference of the Parties to the UNFCCC (COP27) to be hosted in Sharm el-Sheikh, Egypt November 6-18, 2022, the U.S. Special Presidential Envoy for Climate [traveled](#) to Greece (August 28-29), Indonesia (August 30-September 1), and Vietnam (September 2-6) to meet with government counterparts and societal representatives on climate issues. He also gave a [speech](#).
- August 31: The 17th G20 Joint Environment and Climate Ministerial Meeting (JECMM) was held in Bali, Indonesia and attended by ministers both in-person and virtually. A full summary of the meeting, written by the JECMM Chair, is [available](#).

White Papers on or Related to Climate Issues

- August 2, Chinese Ministry of Ecology: [“White Paper on the Development and Protection of Krill in the Yangtze River Region”](#)

Third-Party Analyses & Commentaries

Eyes of the Public on Public Policymakers

- Report: [International Opinion on Climate Change 2022](#) by Meta and Yale Program on Climate Change Communication (Yale University, 2022)
- Report: [Corporate Crackdown Project - Climate](#) (Revolving Door Project, September 2022)
- Survey Report: [Americans Divided Over Direction of Biden’s Climate Change Policies](#) by Brian Kennedy, Alec Tyson and Cary Funk (Pew Research Center, July 14, 2022)
- Commentary: [What You Need to Know About Biden’s Climate “Emergency”](#) by Katie Tubb (The Heritage Foundation, July 22, 2022)
- Analysis: [Why China’s Gen Z see climate change as less important than their Western peers](#) by He Huifeng (*South China Morning Post*, July 22, 2022)
- Analysis: [Fighting Climate Change Through Trade: Despite Many Setbacks, Biden Can Still Make Progress](#) by Joseph E. Stiglitz, Todd N. Tucker, and Isabel Estevez (*Foreign Affairs*, July 25, 2022)
- Analysis: [No state is losing land like Louisiana—but no other state has a bolder plan](#) by Justin Nobel (*National Geographic*, July 28, 2022)
- Interview: [Discovering and protecting Sierra Leone’s seagrass meadows](#) by Roseline Brima (China Dialogue Ocean, August 24, 2022) [[In Chinese](#)]
- Commentary: [Why the New Climate Bill Is Also about Competition with China](#) by Ilaria Mazzocco (Center for Strategic & International Studies, August 25, 2022)
- Analysis: [Liz Truss shows little sign she is ready to meet big environmental challenges](#) by Fiona Harvey (*The Guardian*, September 5, 2022)
- Opinion: [The Senate Just Quietly Passed a Major Climate Treaty](#) by Robinson Meyer (*The Atlantic*, September 28, 2022)

The Intersection of Finance and Climate Change

- Analysis: [Climate Change Is Probably a Drag on Growth, but It’s Unclear How Much](#) by Lydia DePillis (*The New York Times*, July 28, 2022)
- Conference Speech: [Climate Change Risk in the Financial System](#) by Jonathan Kearns (Reserve Bank of Australia, August 24, 2022)

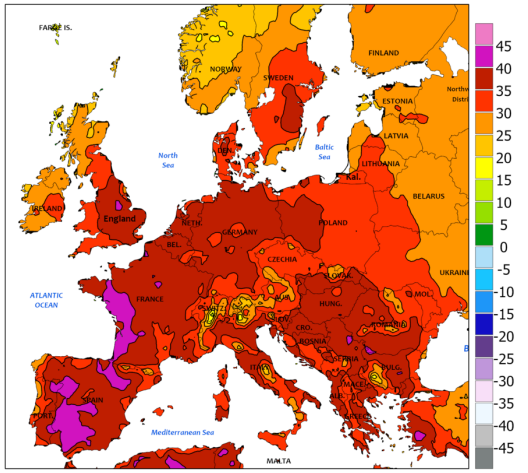

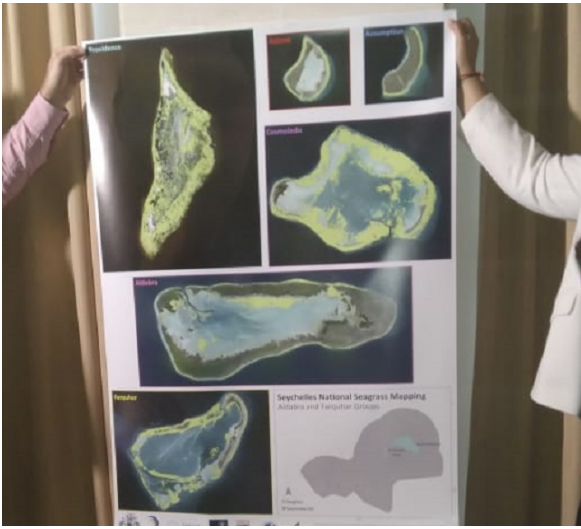
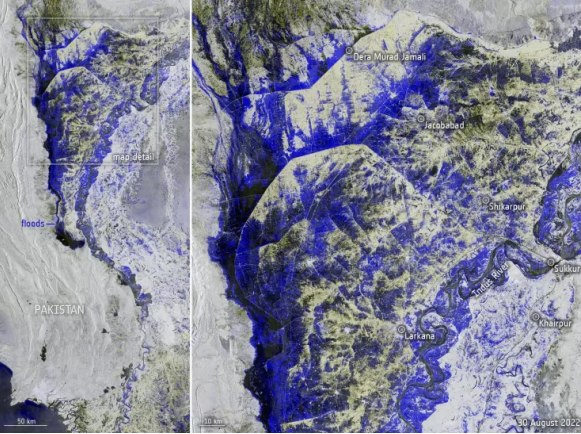
A Special Look on China's Solar Power Development

- Report: [China solar installations more than double in first half](#) by David Stanway (*Reuters*, July 21, 2022)
- Opinion: [China Is Preparing to Step In to Curb Soaring Solar Prices](#) (*Bloomberg*, July 22, 2022)
- Commentary: [China drives global renewables spending to record 1st half](#) by Sayumi Taki & Rurika Imahashi (*Nikkei Asia*, August 16, 2022)
- Commentary: [China has 340 reactors' worth of solar cell plants in the pipeline](#) by Noriyuki Doi (*Nikkei Asia*, August 23, 2022)
- Opinion: [The Sun Will Keep Shining on Chinese Solar](#) By Jacky Wong (*The Wall Street Journal*, August 30, 2022)

Debates on Oil, Decarbonization & Sustainable Fuels

- Analysis: [China Prioritizes Short-Term Energy Security: Implications for Sino-Middle East Relations](#) by John Calabrese (Middle East Institute, July 12, 2022)
- Analysis: [Why do batteries matter for India's energy transition?](#) By Lou Del Bello (The Third Pole, July 20, 2022) [[In Hindi](#)]
- Analysis: [Shipping industry prepares for a future powered by sustainable fuels](#) by Isabelle Gerretsen (China Dialogue Ocean, July 20, 2022) [[In Chinese](#)]
- Opinion: [Macron and Scholz Need a Grand Bargain on Energy](#) by Lionel Laurent (*Bloomberg*, July 21, 2022)

Images of the Month

<p>EUROPE Extreme Maximum Temperature (C) July 17 - 23, 2022</p>  <p>CLIMATE PREDICTION CENTER, NOAA Computer generated contours Based on preliminary data</p> 	<h3><u>July 2022</u></h3> <p><i>A map of Europe displaying the extreme maximum temperatures (in °C) measured for the period between July 17 and 23, 2022.</i></p> <p>Behind the Image: Europe suffered from significant heat waves throughout the summer of 2022, leading to heat-related deaths, drought and other havocs across society.</p> <p>Source: National Oceanic and Atmospheric Administration, Public Domain</p>
	<h3><u>August 2022</u></h3> <p><i>The three completed maps of seagrass meadows from the Seychelles Conservation and Climate Adaptation Trust's (SeyCATT) two-year \$1M mapping exercise.</i></p> <p>Behind the Image: SeyCATT project manager Annick Faure noted that, with the mapping of Seychelles completed, “the authorities will know where there is seagrass and where we must start processes and procedures to continually protect seagrass.”</p> <p>Source: SeyCATT, CC-BY-2.0</p>
	<h3><u>September 2022</u></h3> <p><i>A satellite image of Pakistan covered in floodwaters, taken by the European Space Agency's Earth-observing satellite Sentinel-1 on August 30, 2022.</i></p> <p>Behind the Image: Climate change consequences, extreme weather and heavy rain have led to catastrophic flooding in Pakistan.</p> <p>Source: ESA, CC BY-SA 3.0 IGO</p>

Climate-Focused Quotes of the Quarter

“We intend to be the first country in the world to trade blue carbon credits!”

- Philip Davis, Prime Minister of the Bahamas, [speaking](#) at Marsh Harbor, Central Abaco on August 30, 2022

“Even though Antarctic krill are seemingly far removed from our lives, some of that excess carbon dioxide we’ve pumped into the air is exported to the sea floor by krill, where it will remain for thousands of years. Without Antarctic krill, Earth would be even hotter than it already is.”

- Kim Bernard, a marine ecologist at Oregon State University, [writing](#) to Mongabay. The first ever World Krill Day was held on August 11, 2022.

“Seychelles has made a commitment to protect 50 percent of seagrass by 2025 which will increase to become 100 percent by 2030. With the mapping, the authorities will know where there is seagrass and where we must start processes and procedures to continually protect seagrass.”

- Annick Faure, Coastal Wetlands and Climate Change Project Manager, [speaking](#) at a special workshop by the Seychelles Conservation and Climate Adaptation Trust on August 16, 2022

“Climate finance structure today is actually biased against climate-vulnerable countries. The more vulnerable you are the less climate finance you receive.”

- Kevin Chika Urama, chief economist at the African Development Bank, [speaking](#) at an African ministers meeting in Cario on September 9, 2022, two months ahead of the COP 27

“A huge step forward. It’s a moment to celebrate. But the job is not yet done”

- Manish Bapna, President and CEO of the Natural Resources Defense Council, [speaking](#) at an interview regarding the Inflation Reduction Act on September 13, 2022

“Today, it’s Pakistan. Tomorrow, it could be your country.”

- Antonio Guterres, UN Secretary-General, [speaking](#) in a video message to a ceremony in Islamabad on August 30, 2022

"This need is enormous. So let this be the moment we find within ourselves the will to turn back the tide of climate...devastation and unlock a resilient, sustainable, clean energy economy to preserve our planet.”

- Joe Biden, President of the U.S., in his [address](#) before the 77th Session of the UN General Assembly on September 21, 2022 in New York City

“The weather and climate situation in China is severe and complex... We are clearly witnessing the impacts of climate change.”

- Wenjian Zhang, WMO Assistant Secretary-General, [speaking](#) at World Meteorological Organization, August 25, 2022

Climate-Focused Conferences & Events

Multinational Conferences & Global Forums

Fifth Session of the Intergovernmental Conference

United Nations Conference on BBNJ Treaty Negotiation

August 15-26

New York, NY, United States

- From the Organizer: “A direct quote or description from the event advertisement.”
- Event Summary: Although a previous UN General Assembly resolution mandates that the treaty negotiation should be concluded by the end of 2022, participants of the fifth session of the intergovernmental conference (IGC-5) did not reach an agreement on the final texts of a potential BBNJ treaty.

UN Oceans Conference

United Nations

July 1

Altice Arena, Lisbon, Portugal

- From the Organizer: “The Ocean Conference, co-hosted by the Governments of Kenya and Portugal, came at a critical time as the world is seeking to address many of the deep-rooted problems of our societies laid bare by the COVID-19 pandemic and which will require major structural transformations and common shared solutions that are anchored in the SDGs. To mobilize action, the Conference sought to propel much needed science-based innovative solutions aimed at starting a new chapter of global ocean action.”
- Relevant Sessions: [Small Island Develop States and the Blue Carbon Market](#)

UN Climate & SDGS Conference

United Nations

July 20-21

United Nations University & Tokyo, Japan

- From the Organizer: “More than 2,000 participants at the UN Climate and SDG Synergies Conference, held in Tokyo and virtually on 20-21 July, generated an impressive range of potential solutions and proposals for how to better integrate efforts to tackle these interlinked global crises and accelerate action to address the climate emergency and recent reversals in achieving the Sustainable Development Goals.”
- Relevant Information: [UN Sustainable Development Goals \(SDGs\)](#)

Public Events & Panel Discussions

Upcoming Events

[African Perspectives on Climate and Climate Adaptation in Egypt](#)

Event by Columbia Climate School

October 3 - Online

[Climate Change 2022](#)

Event by Chatham House

October 3-4 - London, United Kingdom & Online

[Forty Years of Antarctic Marine Conservation: Policy Approaches in the Antarctic Treaty System](#)

Event by Wilson Center

October 4 - Online

[Launch: Army Climate Implementation Plan](#)

Event by Center for Strategic & International Studies

October 6 - Hybrid

[Climate Security](#)

Event by Center for a New American Security

October 13 - Online

[Climate Change, Population, and the Shape of the Future](#)

Event by Wilson Center and Population Institute

October 25 - Online

[15th International Conference on Climate Change](#)

Event by the Heartland Institute

February 23-25, 2023 - Orlando, FL, United States

Past Events

[Avoiding “Backdraft” in Climate Policy - When Mitigation or Adaptation Actions Spark Conflict](#)

Event by Columbia Climate School

September 30 - Online

[Toward a clean and secure energy future in the Indo-Pacific: A conversation with Australian Minister for Climate Change and Energy Chris Bowen](#)

Event by Center for Strategic & International Studies

September 23 - Online ([Event Recording Available](#))

[Advancing Climate Security in the Year of Implementation](#)

Event by Stockholm International Peace Research Institute

September 20 - New York, NY, United States ([Event Recording Available](#))

Climate Week NYC

Event by Climate Group

September 19-25 - New York, NY, United States

Climate & Our Economy

Event by Environmental Entrepreneurs and the Institute for Science & Policy

August 25 - Denver, CO, United States ([Event Recording Available](#))

How Sustainability and Technology are Reshaping China and the World's Future—A Green Tea Chat with UPenn's Scott Moore

Event by Wilson Center

July 26 - Online ([Event Video Recording Available](#))

Preserving Tomorrow: The Climate Crisis and Our Path Forward

Event by Carnegie Endowment for International Peace

July 12 - Online ([Event Video Recording Available](#))

Transatlantic Climate Bridge Conference 2022

Event by the Transatlantic Climate Bridge

July 6-8 - Online ([Event Recording Available](#))

Nature-based Solutions Conference

Event by University of Oxford

July 5-7 - Hybrid ([Event Summary and Video Recording Available](#))



London Climate Action Week 2022: Harnessing the Power of London for Global Climate Action

Event by E3G (Third Generation Environmentalism Limited)

June 25-July 3- Hybrid

ICAS BCCC Program Updates

ICAS Upcoming BCCC Program Event

Wednesday, October 12, 2022
 9:30am - 11:00am EDT (UTC-4)
 Virtual (Zoom)

Prospects of Climate Policies and Cooperation: The Expectations of COP 27

~Roundtable~

Panelists

Sally YOZELL
Stimson Center

Anke HEROLD
*Oeko-Institut e.V.
 (Institute for Applied Ecology)*



TENG Fei
Tsinghua University

Moderator & Welcoming Remarks
Nong HONG
Institute for China-America Studies

Opening Remarks
WANG Sheng
National Institute for South China Sea Studies

Closing Remarks
YANG Li
Institute for China-Europe Studies

RSVP: https://us06web.zoom.us/webinar/register/WN_7PvUALpQTsGXW4wuMsWkiw

Prospects of Climate Policies and Cooperation: The Expectations of COP 27

October 12, 2022

9:30-11:00am EDT (UTC-4)

Virtual (Zoom)

There are now fewer than one hundred days before the 27th session of the Conference of the Parties (COP 27) to the UNFCCC, which is set to take place in Egypt from November 7-18, 2022. The world's climate is deteriorating at a much faster pace than expected as we experience more frequent extreme weather and natural disasters. Also, the current measures on climate change set during COP 26 are far from being met. With the ambition of making this conference into "a radical turning point in international climate efforts in coordination with all parties," COP 27 seeks to find solutions to both imminent and persisting climate crises. COP 27 hopes to continue the world's efforts to reduce greenhouse gas emissions within the framework of the Paris Agreement. Meanwhile, it plans to support the climate-vulnerable countries in adapting to the unavoidable impacts of climate change. Therefore, financing and assisting developing countries that lack the monetary and technical capacities to achieve the stated goals is another essential component of COP 27.

Are countries delivering on their climate protection agendas as they promised at last year's COP 26 and the Paris Agreement, which was signed almost seven years ago? What are some examples of noticeable domestic policies designed to fulfill these agreements? Are there any recent developments in or retrogressions of these policies? Is establishing international institutions to form binding forces in affecting countries' domestic environmental policies a feasible solution? As an important topic of COP 27, what are examples of practical measures in assisting developing countries to mitigate and reverse climate challenges? How do we encourage different actors to walk together in the same direction and consider using one another's comparative advantages in multilateral cooperation? Considering recent downturns in both geopolitical interactions and mutual trust, how do we ensure countries pay close attention to environmental problems while not using it as a bargaining chip? Conversely, would healthy competition be a good solution to bring all major powers back to the table? Join the ICAS Blue Carbon & Climate Change Program for this event to warm up for COP 27 in November.

RSVP: https://us06web.zoom.us/webinar/register/WN_7PvUALpQTsGXW4wuMsWkiw

Learn More: <https://chinaus-icas.org/event/prospects-of-climate-policies-and-cooperation/>

Share the Poster: <https://chinaus-icas.org/wp-content/uploads/2022/10/BCCC-COP27-Event-10-12-2022-Poster.pdf>

ICAS Academic Engagement

Executive Director Nong Hong speaks at the ISA Women in the Law of the Sea Conference
September 26-28, 2022 (New York)
Hybrid (New York & Virtual)



On Tuesday, September 27, ICAS Executive Director Nong Hong spoke at the International Seabed Authority's Women in the Law of the Sea Conference 2022. Her presentation focused on "Ocean governance in the South China Sea: with a focus on law, policy and management on marine environment protection" and is part of Session V: Protection of the marine environment.

[Learn More:](#)

<https://chinaus-icas.org/event/executive-director-nong-hong-speaks-at-the-isa-women-in-the-law-of-the-sea-conference/>

[Explore the ISA's Summary and Press Release:](#)

<https://www.isa.org.jm/news/2022-women-law-sea-conference-successfully-closes-renewed-commitment-empowering-women-marine>

ICAS Academic Engagement

Executive Director Nong Hong speaks at the International Symposium on "Ocean Governance, Environmental Rights and Sustainable Development in the Anthropocene"
September 21-23, 2022 (Tianjin, UTC+8)
Hybrid (Tianjin & Virtual)

ICAS Executive Director Nong Hong participated as a panelist and moderator at the International Symposium on "Ocean Governance, Environmental Rights and Sustainable Development in the Anthropocene" held by Nankai University. Dr. Nong presented in Panel I: Polar Governance and Law in the Anthropocene on "China and the United States in the Arctic: Will Strategic Competition or Practical Cooperation Drive the Future Development."

[Learn More:](#)

<https://chinaus-icas.org/event/executive-director-nong-hong-speaks-at-the-international-symposium-on-ocean-governance-environmental-rights-and-sustainable-development-in-the-anthropocene/>

ICAS Expert Voices Initiative

Interview with James Borton on science diplomacy as a solution to the South China Sea maritime disputes

Friday, July 1, 2022

James Borton joins ICAS in this installment of Expert Voices Initiative to discuss how multilateral science diplomacy can help resolve disputes and improve regional security in the South China Sea. On the agenda for discussion are:

- Outcomes of the June 2022 IISS Shangri-La Security Dialogue
- Impact of the Philippine Presidential Election Results on Southeast Asia
- Comparison of Vietnam's Maritime Policies with that of China's and SE Asia's
- The History of Vietnam as a 'Traditional' Custodian of the South China Sea
- The Role of China's 'Maritime Militia' -'Science Diplomacy' as a Solution to South China Sea Disputes
- The Clash Between Geopolitics and Scientific Cooperation
- How to Incentivize Policymakers to Act on Marine Conservation -Lessons for Policymakers on Promoting Successful Scientific Cooperation

[Watch the Interview:](https://youtu.be/PW4OV-_AfVU) https://youtu.be/PW4OV-_AfVU

The Institute for China-America Studies (ICAS) is an independent think tank in Washington D.C. ICAS focuses on the evolving dynamics in the U.S.-China relationship to promote greater collaboration and mutual understanding through sincere exchanges of fresh ideas, objective policy-oriented research, and fair assessments of this critical bilateral relationship.

We aim to provide a window into the worldviews of both the United States and China, and thereby serve as a vehicle to promote greater understanding between these two countries and societies.

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