

very different but mutually beloved lions of the Senate.

I particularly thank my distinguished senior colleague for organizing our chance to come here and reflect on our friend Claiborne Pell. I think nobody better than he carries on the Pell tradition.

I thank Senator REED.

Thank you, Mr. President.

I yield the floor.

The PRESIDING OFFICER. The Senator from Rhode Island.

Mr. REED. I again want to thank my colleague Senator WHITEHOUSE for his very eloquent words about a great American, Claiborne Pell.

Just a final comment. If you ever want to feel truly beloved, embraced by constituents, respected and admired, do what I did several times—march in a parade with Claiborne Pell and pretend they cheer for you.

Mr. President, I yield the floor.

I suggest the absence of a quorum.

The PRESIDING OFFICER (Mr. JOHNSON). The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. THUNE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

COAST GUARD REAUTHORIZATION BILL

Mr. THUNE. Mr. President, I know the perception out there is often that bipartisanship is dead, but the bill we passed this afternoon, the Coast Guard Authorization Act, is a good reminder that we can still come together and get things done for the American people.

The bill we just passed overwhelmingly, which is headed to the President's desk, has been negotiated for almost 2 years. Portions of this bill have been discussed for over a decade. It is good to see Senators and Representatives of both parties come together in compromise on such an important piece of legislation.

We celebrated Veterans Day earlier this week. As always, it was a powerful reminder of everything we owe to the men and women who keep us safe, like the men and women of the U.S. Coast Guard. This key branch of the military is responsible for defending our Nation's waters. The men and women of the Coast Guard stand on the frontlines preventing dangerous drugs, weapons, and individuals from entering our country by sea. When disaster strikes in the form of storms and hurricanes, the Coast Guard is on the scene conducting search and rescue and carrying people to safety. We owe the men and women of the Coast Guard a tremendous debt of gratitude. We owe it to the American people to ensure that our Nation's coastguardsmen have the tools and resources they need to carry out their mission.

This bill will improve maritime safety, security, and stewardship. It gives the Coast Guard the authority it needs to conduct its military and law enforcement missions and authorizes the

equipment it needs to react to national emergencies.

The bill also creates uniform national ballast water and discharge standards for commercial vehicles that give industry certainty while ensuring the protection of our environment. It also reauthorizes the Federal Maritime Commission and the National Oceanic and Atmospheric Administration's hydrographic services.

As chairman of the Commerce Committee, I have been honored to work with dedicated committee members of both parties. I would like to personally thank the members of our committee for all their hard work this Congress.

Special thanks on this bill go to Senator NELSON, the committee's ranking member; Senators SULLIVAN and BALDWIN, the chairman and ranking member of our Oceans, Atmosphere, Fisheries, and Coast Guard Subcommittee; and to Senators FISCHER and PETERS, chairman and ranking member of our Surface Transportation Subcommittee.

I would also like to thank Chairman BARRASSO and Ranking Member CARPER from the Environment and Public Works Committee and Chairman SHUSTER and Ranking Member DEFAZIO of the House Transportation and Infrastructure Committee. They have been great partners. I appreciate everything they have done to help get this bill across the finish line.

Finally, I would like to thank all the staff from both Chambers who worked tirelessly—including many late nights and weekends—on this bill. Without their efforts, the final product would not have been such a success. While everyone on the team worked hard on the bill, on my staff, I would like to especially thank Nick Rossi, Adrian Arnakis, Fern Gibbons, Jason Smith, Patrick Fuchs, Andrew Neely, Chance Costello, Alison Graab, Frederick Hill, and Brianna Manzelli.

On Senator NELSON's staff, thanks go to Kim Lipsky, Jeff Lewis, Devon Barnhart, Sarah Gonzales-Rothi, and Catherine Carabine.

From the Environment and Public Works Committee, I want to thank Richard Russell, Elizabeth Horner, Mary Frances Repko, Andrew Rogers, Christophe Tulou, and Zach Pilchen.

I also would like to place in the RECORD the names of the staffers from our partner committees in the House who played key roles in this important legislation. On Chairman SHUSTER's staff, the individuals who should be thanked include Chris Vieson, Geoff Gosselin, John Rayfield, Bonnie Bruce, Luke Preston, and Cameron Humphrey. From Ranking Member DEFAZIO's staff, thanks goes to Kathy Dedrick and Dave Jansen.

I am sure I have left someone off this list, and for that, I apologize. It underscores the amount of collective effort that went into our work here.

I could also easily expand the list to include those at the Coast Guard and at the Environmental Protection Agency who provided valuable assistance

and technical expertise. We look forward to working with them on the implementation of this bill.

As I said earlier, the Coast Guard reauthorization that we just passed is a reminder that we can work together and get things done for the American people. It is a timely reminder given the election. Last week, the American people elected a Democratic majority to the House of Representatives and re-elected a Republican majority to the Senate. If we are going to get things done in the new Congress, we are going to need to work together.

Here in the Senate, we have spent the past 2 years working on an agenda to expand opportunities for working families and to put more money in Americans' pockets. We have also worked hard to ensure that those who keep our Nation safe have all the tools and resources they need. We are going to continue that agenda in the lame-duck session and in the new Congress. I really hope Democrats will join us. We can work together to grow our economy, lift up working families, and protect our Nation, but it is going to require Democrats to make a choice.

Democrats have spent most of the past 2 years attempting to relitigate the 2016 election. Losing elections is a fact of life in a democracy, but Democrats just haven't seemed to be able to let this one go. Over the past 2 years, they have focused most of their energy on knee-jerk opposition to anything Republicans or the President propose, even when they have agreed with us. They routinely delayed confirmation of the President's nominees—not just the ones they didn't like but the ones they ended up supporting. They refused to work with Republicans on an overhaul of our Nation's burdensome, outdated Tax Code even though Democrats supported many of the measures that ended up in the final bill. Obviously, there are going to be times when the right thing to do as a Member of Congress is to oppose. We have a responsibility to say no when we think a bill or nominee would profoundly damage the country. But that is not what Democrats have done. Too many of them have made opposition not a tool to be deployed when needed but their standard operating procedure.

I say again, Democrats have a choice. They can continue down the path of partisanship and opposition, or they can decide to start afresh and to work with Republicans. I hope they choose the latter.

I look forward to working with my Democratic colleagues in this new Congress on the priorities that the American people sent us here to work on—to make our economy stronger, to grow at a faster rate, to create better paying jobs, to raise wages in this country, and to give future generations of Americans more opportunities at a higher standard of living and a better quality of life.

I yield the floor.

I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. WHITEHOUSE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. WHITEHOUSE. Mr. President, I ask unanimous consent to speak for up to 20 minutes as in morning business.

The PRESIDING OFFICER. Without objection, it is so ordered.

CLIMATE CHANGE

Mr. WHITEHOUSE. Mr. President, it is hard, particularly for those of us from coastal States, to overstate the importance of the Earth's oceans as a storehouse of our food, as a regulator of our climate, as a highway for our travel and trade, and as a source of wonder, joy, and recreation. According to the Organization for Economic Cooperation and Development, oceans contributed \$1.5 trillion to the global economy in 2010. But climate change is putting this all at risk.

I have spoken frequently here on the floor about the threat climate change poses to our oceans and of the warning signals blaring around the world. One of the most overlooked of those signals is the enormous amount of heat accumulating in the oceans.

As CBS News reported last week, "recent revelations have been particularly alarming" and "deserv[ing] of a big neon sign on Broadway." My humble floor speeches may not be a big neon sign on Broadway, but I do hope they shine a little light on the plight of our oceans, which ultimately is our human plight.

We know that more than 90 percent of the excess heat trapped by our greenhouse gas emissions has been absorbed by the oceans—no dispute, not even by the Trump administration. The Federal Government's "2017 Climate Science Special Report," a multi-agency report by experts from NOAA, NASA, and the Department of Energy, labeled as "the United States' most definitive statement on climate change science" by the New York Times, found that the oceans absorbed more than 9 zettajoules of heat energy per year.

What is a zettajoule? A zettajoule is a billion trillion joules. A joule is a measure of heat energy, J-O-U-L-E. So 9 zettajoules is 9 billion trillion joules. That is more than 12 times the total energy that human beings use globally each year, just to put a scale on what 9 billion trillion joules is.

To get another measure of how much energy that is, visualize the power of a detonated Hiroshima-style atomic bomb. Imagine its classic mushroom cloud erupting into the sky. Imagine all of that energy from a Hiroshima-style atomic bomb captured as heat—pure heat.

Now imagine four Hiroshima-sized atomic bombs exploded every second—every second. That is the equivalent of the excess heat going into our oceans

because of climate change, because of our carbon emissions. More than four atomic bombs' worth of excess heat energy is being absorbed by the oceans every second of every day of every year. That is a massive amount of heat energy, and adding it to the oceans has consequences.

The most direct consequence of all that energy being pumped into the seas obviously is increased water temperatures. Global average ocean surface temperature is up around 0.8 degrees Celsius, or 1.5 degrees Fahrenheit, since preindustrial times. That is enough to throw off the delicate balance of ocean conditions that marine creatures rely on to survive. Within that global ocean warming are extreme ocean temperature spikes around the world. These marine heat waves in the ocean were first identified and characterized in 2011. This is a newly described phenomenon that climate change has brought to our seas.

Although marine heat waves were first identified and characterized in 2011, they have already caused permanent damage in our oceans. The Great Barrier Reef is the largest coral reef in the world. It stretches for 1,400 miles off Northeastern Australia, and it is one of the seven natural wonders of the world. It is made up of corals—corals that can become heat stressed and evict the tiny algae that support corals and give corals their bright colors. Without the algae, the corals appear white, so these events are called coral bleaching.

In the summer of 2016, the Great Barrier Reef was hit by the most severe marine heat wave on record. It caused the longest and worst mass coral bleaching event in history. Then another heat wave and bleaching occurred the next year, in 2017. These unprecedented back-to-back bleaching events killed half of all corals in the Great Barrier Reef. If there is a wonder of the world, if there is a majestic feature of God's creation, it is the Great Barrier Reef, and we are busily wrecking it in this generation through carbon emissions.

The prognosis for the rest of the world's coral reefs is grim. The U.N. International Panel on Climate Change released a report last month, finding that coral reefs will all but disappear from Earth if we warm by 2 degrees Celsius—which, by the way, is the goal we are trying to stay under through the Paris accord. Even if we stay under that goal, corals will suffer immensely. Without any changes to our fossil fuel consumption, we are on track to blow by 2 degrees and hit 3 degrees Celsius of global warming by 2100, making corals virtually extinct.

Warming oceans are wreaking havoc on the world's fisheries. Fish feed the world and power coastal economies. The World Health Organization says that fish are the main source of protein for around 1 billion people worldwide. The U.N. Food and Agriculture Organization estimates that 60 million people

are employed in fisheries and agriculture.

Across the globe and here at home we are seeing dangerous shifts affecting the fishing industry. Rhode Island once had a booming lobster industry. But the lobster population is shifting north as our waters warm, leaving Rhode Island lobster traps empty. The National Oceanic and Atmospheric Administration reports, "The lobster industry in New York and southern New England has nearly collapsed." Maine, as Senator ANGUS KING has pointed out, is temporarily benefiting from the northern movement of lobster, but the lobster will keep moving north into Canada as the oceans continue to warm.

Rhode Islanders and other New England fishermen are also looking worriedly at declining shellfish populations. Total landings for eastern oysters, northern quahogs, softshell clams, and northern bay scallops declined 85 percent between 1980 and 2010. The National Oceanic and Atmospheric Administration identified warming ocean temperatures as the key driver for that decline. On the other side of that decline, of course, are the livelihoods of all the men and women in that industry.

The accumulating heat energy in our seas is also causing them to rise. As water warms, it expands. This thermal expansion is responsible for around one-third of the rise we have measured in sea levels. The rest comes mostly from melting ice, again, thanks to climate change. Global sea level has already risen over eight inches on average in the past 100 years—more in certain locations—and the rate of increase is accelerating.

Warming and expanding waters eat away at the large ice sheets in the Antarctic. As the edges melt away, the glaciers behind them melt more quickly, adding additional water to the ocean. The IPCC warns that as the world reaches warming levels of 1.5 to 2 degrees Celsius—again, what we are trying to stay at; this is our target. This isn't if it is worse. At that 1.5 to 2 degrees Celsius, ice sheet melt could trigger multiple meters of sea level rise over time—meters, not inches. We are already 1 degree Celsius above preindustrial times, so there is not much room for maneuver between where we are and 1.5 to 2 degrees.

Warmer seas also supercharge storms. Hurricanes gain strength from heat energy in the oceans below them. Warmer oceans also evaporate more water to the atmosphere, generating more rainfall. Stronger and wetter storms then ride ashore on higher sea levels, pushing larger storm surges ahead of them into our coastal States.

Many of us remember the devastation Superstorm Sandy brought to the mid-Atlantic and southern New England States in 2012. Here is what Dr. Michael Mann, professor of atmospheric science and director of the Earth System Science Center at Pennsylvania State University, said about that storm: