H.R. 2437, H.R. 3415, H.R. 4385, AND H.R. 5490

LEGISLATIVE HEARING

BEFORE THE

SUBCOMMITTEE ON WATER, WILDLIFE AND FISHERIES

OF THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTEENTH CONGRESS

FIRST SESSION

Thursday, September 28, 2023

Serial No. 118–66

Printed for the use of the Committee on Natural Resources

Available via the World Wide Web: http://www.govinfo.gov
or
Committee address: http://naturalresources.house.gov

U.S. GOVERNMENT PUBLISHING OFFICE
53–644 PDF WASHINGTON : 2024

COMMITTEE ON NATURAL RESOURCES

BRUCE WESTERMAN, AR, *Chairman*
DOUG LAMBORN, CO, *Vice Chairman*
RAÚL M. GRIJALVA, AZ, *Ranking Member*

Doug Lamborn, CO
Robert J. Wittman, VA
Tom McClintock, CA
Paul Gosar, AZ
Garret Graves, LA
Aumua Amata C. Radewagen, AS
Doug LaMalfa, CA
Daniel Webster, FL
Jenniffer González-Colón, PR
Russ Fulcher, ID
Pete Stauber, MN
John R. Curtis, UT
Tom Tiffany, WI
Jerry Carl, AL
Matt Rosendale, MT
Lauren Boebert, CO
Cliff Bentz, OR
Jen Kiggans, VA
Jim Moylan, GU
Wesley P. Hunt, TX
Mike Collins, GA
Anna Paulina Luna, FL
John Duarte, CA
Harriet M. Hageman, WY

Grace F. Napolitano, CA
Gregorio Kilili Camacho Sablan, CNMI
Jared Huffman, CA
Ruben Gallego, AZ
Joe Neguse, CO
Mike Levin, CA
Katie Porter, CA
Teresa Leger Fernández, NM
Melanie A. Stansbury, NM
Mary Sattler Peltola, AK
Alexandria Ocasio-Cortez, NY
Kevin Mullin, CA
Val T. Hoyle, OR
Sydney Kamlager-Dove, CA
Seth Magaziner, RI
Nydia M. Velázquez, NY
Ed Case, HI
Debbie Dingell, MI
Susie Lee, NV

Vivian Moeglein, *Staff Director*
Tom Connally, *Chief Counsel*
Lora Snyder, *Democratic Staff Director*
http://naturalresources.house.gov

SUBCOMMITTEE ON WATER, WILDLIFE AND FISHERIES

CLIFF BENTZ, OR, *Chairman*
JEN KIGGANS, VA, *Vice Chair*
JARED HUFFMAN, CA, *Ranking Member*

Robert J. Wittman, VA
Tom McClintock, CA
Garret Graves, LA
Aumua Amata C. Radewagen, AS
Doug LaMalfa, CA
Daniel Webster, FL
Jenniffer González-Colón, PR
Jerry Carl, AL
Lauren Boebert, CO
Jen Kiggans, VA
Anna Paulina Luna, FL
John Duarte, CA
Harriet M. Hageman, WY
Bruce Westerman, AR, *ex officio*

Grace F. Napolitano, CA
Mike Levin, CA
Mary Sattler Peltola, AK
Kevin Mullin, CA
Val T. Hoyle, OR
Seth Magaziner, RI
Debbie Dingell, MI
Ruben Gallego, AZ
Joe Neguse, CO
Katie Porter, CA
Ed Case, HI
Raúl M. Grijalva, AZ, *ex officio*

CONTENTS

LEGISLATIVE HEARING ON H.R. 2437, TO REVISE THE BOUNDARIES OF A UNIT OF THE JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM IN TOPSAIL, NORTH CAROLINA, AND FOR OTHER PURPOSES; H.R. 3415, TO DIRECT THE SECRETARY OF THE INTERIOR TO CONVEY TO THE MIDVALE IRRIGATION DISTRICT THE PILOT BUTTE POWER PLANT IN THE STATE OF WYOMING, AND FOR OTHER PURPOSES, "PILOT BUTTE POWER PLANT CONVEYANCE ACT"; H.R. 4385, TO EXTEND AUTHORIZATION OF THE RECLAMATION STATES EMERGENCY DROUGHT RELIEF ACT OF 1991, "DROUGHT PREPAREDNESS ACT"; AND H.R. 5490, TO AMEND THE COASTAL BARRIER RESOURCES ACT TO EXPAND THE JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM, AND FOR OTHER PURPOSES, "BOLSTERING ECOSYSTEMS AGAINST COASTAL HARM ACT", OR "BEACH ACT"

Thursday, September 28, 2023
U.S. House of Representatives
Subcommittee on Water, Wildlife and Fisheries
Committee on Natural Resources
Washington, DC

The Subcommittee met, pursuant to notice, at 10:03 a.m. in Room 1324, Longworth House Office Building, Hon. Cliff Bentz [Chairman of the Subcommittee] presiding.

Present: Representatives Bentz, LaMalfa, Webster, Carl, Kiggans, Hageman; Huffman, and Neguse.

Also present: Representatives Ciscomani and Murphy.

Mr. BENTZ. The Subcommittee on Water, Wildlife and Fisheries will come to order.

Good morning, everyone. I want to welcome Members, witnesses, and our guests in the audience to today's hearing.

Without objection, the Chair is authorized to declare a recess of the Subcommittee at any time.

Under Committee Rule 4(f), any oral opening statements at the hearing are limited to the Chairman and the Ranking Member. I

therefore ask unanimous consent that all other Members' opening statements be made part of the hearing record if they are submitted in accordance with Committee Rule 3(o).

Without objection, so ordered.

I also ask unanimous consent the gentleman from North Carolina, Mr. Murphy, and the gentleman from Arizona, Mr. Ciscomani, be allowed to participate in today's hearing.

Without objection, so ordered.

We are here today to consider four legislative measures: H.R. 2437 to revise the boundaries of a unit of the John H. Chafee Coastal Barrier Resources System in Topsail, North Carolina, sponsored by Representative Murphy of North Carolina; H.R. 3415, the Pilot Butte Power Plant Conveyance Act, sponsored by Representative Hageman of Wyoming; H.R. 4385, the Drought Preparedness Act, sponsored by Representative Neguse of Colorado; and H.R. 5490, the BEACH Act, sponsored by Representative Kiggans of Virginia.

I now recognize myself for an opening statement.

STATEMENT OF THE HON. CLIFF BENTZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. BENTZ. Today, we are meeting to discuss four bills that address a variety of regional issues, from transferring local control of Western water infrastructure to updating coastal barrier maps. The bills under consideration at the hearing address issues of local importance, remove barriers created by Federal processes and bureaucracy, and put communities back in the driver's seat.

H.R. 3415, introduced by Congresswoman Hageman of Wyoming, provides greater flexibility and autonomy to the Midvale Irrigation District by conveying the Pilot Butte Power Plant to the District. Reclamation places this power plant in the mothballed status in 2008. And because it is considered a reserved works, it requires an Act of Congress for this transfer to occur.

H.R. 4385, introduced by Congressman Neguse, extends authorization for emergency authorities that allow the Bureau of Reclamation to mitigate the impacts of severe drought in Western states. At its core, Reclamation was established to provide water in the arid West. Dealing with drought conditions was then and continues to be a significant part of Reclamation's mission.

H.R. 2437, introduced by Congressman Murphy, would revise the boundaries of Coastal Barrier Resources System Unit L06 in North Topsail Beach, North Carolina. I am aware this issue has been ongoing for decades, and I hope we can provide some finality on the issue.

H.R. 5490, introduced by Congresswoman Kiggans, enacts the final recommended Coastal Barrier Resources System maps transmitted to Congress in 2021. After Hurricane Sandy, Congress mandated that the U.S. Fish and Wildlife Service update the System maps. These maps will only become effective if enacted into law by Congress. Additionally, the bill makes improvements to the CBRA statute.

I thank the Members for their work on these bills, and I thank the witnesses for testifying today.

I now recognize Ranking Member Huffman for his opening statement.

STATEMENT OF THE HON. JARED HUFFMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. HUFFMAN. Thank you, Mr. Chairman, and welcome to the witnesses.

When President Reagan signed the piece of legislation that we call CBRA in 1982, he said that the Act would "halt the Federal subsidy spiral" by discouraging Federal investments in development on storm-prone coastal land, which, if developed, would put human lives and property at risk and cost taxpayers billions of dollars in disaster relief. It was a smart, forward-looking law, and in the years since CBRA was enacted it has saved the United States over $9.5 billion in disaster costs alone, protected millions of acres of habitat, and probably an awful lot of lives, as well.

Today, as we face stronger and more frequent storms and rising sea level, the value proposition of CBRA is more important than ever. Scientists estimate that CBRA will save taxpayers up to $108 billion by 2068.

In 2012, as Hurricane Sandy hit the Atlantic coast, intact barrier islands did their job. They absorbed the brunt of the storm's energy, saving lives and protecting property. Still, many coastal barrier islands and ecosystems were significantly altered. As a result, the Fish and Wildlife Service initiated a project to update the maps of the Coastal Barrier Resources System. H.R. 5490 legislates the incorporation of these maps to modernize CBRA, and that is a good thing.

It also makes additional updates to CBRA, including requiring disclosure to prospective buyers that a property is in the CBRA System, and clarifying Federal expenditures in Otherwise Protected Areas, or OPAs.

The bill is a significant step in the right direction, but it omits several important sea-level-related provisions included in the Senate version. I look forward to hearing about the value of those provisions from our witness, Mr. Skip Stiles. Mr. Stiles is an expert in coastal and wetland management, and has helped the state of Virginia prepare its coastal zone for sea level rise and other climate change impacts.

We have another CBRA-related bill on the agenda, H.R. 2437, which removes areas in North Topsail Beach from the Coastal Barrier Resources System.

Look, I empathize with the North Topsail Beach community. They are struggling with the consequences of climate change. But I also recognize their situation is an unfortunate example of why it is important to modernize CBRA to further protect coastal communities and prepare for imminent climate change impacts. Removing parts of North Topsail Beach from the System would endanger residents and increase costs to taxpayers. This is not the precedent that we want to set right now for other vulnerable coastal communities.

We will also discuss two bills today that fall under the Bureau of Reclamation's authority.

H.R. 4385, the Drought Preparedness Act, introduced by Mr. Neguse, it reauthorizes Reclamation's drought response program through 2028. The current authorization is set to expire this year. This program has provided invaluable assistance for drought contingency planning and management. I appreciate Mr. Neguse's leadership on this.

As many of our districts face near annual droughts, it is critical that Congress act to ensure programs like this are in place to mitigate climate-induced impacts of drought on our water supply. So, I hope my colleagues will join me to ensure a successful reauthorization of this program.

A final bill on our agenda is from Representative Hageman of Wyoming. It would transfer ownership of the Pilot Butte Power Plant, currently owned by Reclamation, to the Midvale Irrigation District. This power plant is under Reclamation's Riverton unit, it began operations in 1925. The facility was operated seasonally until it was removed from service in 1973, and ultimately again in 2008 due to high operation and maintenance costs. This bill would allow Reclamation and the District to negotiate a mutually beneficial transfer agreement. I look forward to hearing more on that legislation from our witnesses.

With that, Mr. Chairman, I thank you and yield back.

Mr. BENTZ. I will now introduce our first panel.

As is typical with legislative hearings, the bills' sponsors are recognized for 5 minutes each to discuss their bills. With us today are Congresswoman Harriet Hageman, Congressman Joe Neguse, Congresswoman Jen Kiggans, and Congressman Greg Murphy.

I now recognize Ms. Hageman for 5 minutes.

STATEMENT OF THE HON. HARRIET M. HAGEMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WYOMING

Ms. HAGEMAN. Thank you, Mr. Chairman, and thank you everyone for being here today.

I am before the Committee to advocate for my bill, the Pilot Butte Power Plant Conveyance Act, which requires the Bureau of Reclamation to enter into good faith negotiations with the Midvale Irrigation District for the conveyance of the Pilot Butte Power Plant located in Pavillion, Wyoming.

This proposition is not merely an administrative change or a conveyance of responsibilities, but a critical step toward improving water use for communities in need and responsible resource management. Transferring ownership of the power plant to Midvale Irrigation District will provide for greater flexibility and relieve administrative burdens for the Bureau of Reclamation.

Local entities are often better equipped to understand the unique needs and challenges of their communities, and that is why the Bureau has been using its authority to transfer title to local projects throughout the 17 Western states. By placing greater control of the hydro plant in the hands of Midvale Irrigation District, we empower it to make decisions that directly impact its region. This promotes a sense of ownership and accountability that can lead to more efficient operation and responsive governance.

Secondly, this transfer can lead to significant economic benefits. Hydroelectric plants have the potential to generate substantial revenue. By allowing Midvale to control these resources, it can reinvest the profits into the community. This will ultimately mean improved infrastructure and more support for local businesses. The economic ripple effect can be profound and positively impact the lives of those living in the District.

Moreover, Midvale Irrigation District is intimately familiar with the intricacies of water management and distribution in the area. Updating and repairing this hydro plant will expand the state's portfolio, allowing for a more holistic approach to resource management. This will help Wyoming to optimize water usage, balancing the needs of agriculture, industry, and the environment more effectively. This holistic approach can be instrumental in mitigating water scarcity issues that plague the West.

We have an obvious need to increase the amount of water stored through surface infrastructure and groundwater storage projects. According to the Pacific Institute, California's urban areas are wasting between 7 and 70,000 and 3.9 million acre-feet of water every year, depending on how dry or wet the year is, simply because of a lack of infrastructure.

This is a year of extreme abundance. Many Westerners are probably wondering why it is so difficult to capitalize off of a year like this. For far too long, they have watched certain leaders shrug their shoulders and say, "It is not that simple." But the reality is we need additional infrastructure. It is taking important actions like conveying this power plant to the Midvale Irrigation District that will allow us to more effectively manage our water and provide power to our communities.

Additionally, environmental stewardship is a critical consideration. Wyomingites are more attuned to the ecological nuances of their surroundings. By placing the hydro plant under local control, we increase the practice of responsible environmental practices. This includes measures to protect aquatic life, maintain water quality, and ensure the sustainable operation of the plant without compromising our ecosystems.

Mr. Lynn will have the opportunity to talk about this further in his testimony. I thank you for traveling from Wyoming here today.

And in our line of questioning, he is an expert on this topic and is able to provide an expansive background on the preparedness of the irrigation district to assume responsibility of ownership in addition to responsibilities to maintain and operate this facility.

Transferring Pilot Butte Power Plant to Midvale Irrigation District is a move that will empower Wyoming communities, boost Wyoming economies, enhance resource management, and promote responsible environmental practices. It is a decision that reflects the values of decentralization, self-determination, and self-reliance.

The Pilot Butte Power Plant Conveyance Act will certainly bring about positive change and prosperity for both the local community and the state of Wyoming as a whole.

Again, thank you for being here. I appreciate the support on this particular bill. It is an important one for the state of Wyoming.

With that, I yield back, and thank you.

Mr. BENTZ. Thank you, Ms. Hageman. I now recognize Mr. Neguse for 5 minutes.

STATEMENT OF THE HON. JOE NEGUSE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. NEGUSE. Thank you, Chairman Bentz and Ranking Member Huffman, for allowing me the opportunity to testify today on my bill, the Drought Preparedness Act.

And I also want to say thank you to the Chairman and to the Ranking Member for considering my bill. I very much appreciate your indulgence in that regard.

As we know in the West, and Ranking Member Huffman articulated this so well, despite a good moisture year for many parts of my state of Colorado and other parts of the West this year, we are still seeing continual drought conditions over the past several years that are worsening as a result of climate change. Scientists and agency experts predict that these conditions will only continue through the coming years, and it is critical that we provide our Federal agencies, state governments, local partners with the resources that they need to prepare for and respond to the conditions.

Let me just say very clearly, and perhaps stating the obvious, the Colorado River, the headwaters of which are in my district in western Colorado, is in crisis. The Bureau of Reclamation, as we all know, is currently working with the Colorado River Basin states, tribes, local stakeholders to generate additional solutions and long-term reductions in usage along the river that are more sustainable with the water levels that we have been seeing.

This is an important time for the Colorado River and many other rivers across the West. We need to make sure that we are providing our states and agencies with every tool possible to combat this crisis. And this is important because from my perspective and for my constituents, Colorado has done its part. Colorado's water users have done their part. It is time, in our view, for our colleagues to step up to the plate.

And that is why I was proud earlier this year to start the Colorado River Caucus, a bipartisan caucus with colleagues from across the upper basin and lower basin states, Republicans and Democrats, coming together to have candid conversations about a way forward, partnering with the Bureau of Reclamation on important initiatives and activities that they are pursuing, and it is also why I was proud to introduce this particular bill, which is bipartisan with my colleague, Representative Ciscomani from Arizona.

And as the Ranking Member so well articulated, the bill is a simple one. It reauthorizes the Bureau of Reclamation's Drought Response Program, which is currently set to expire in several days at the end of the Fiscal Year. The Drought Response Program was established under the Reclamation States Emergency Drought Relief Act. It provides vital assistance for drought contingency planning, authorizes emergency actions that the Bureau can take, and supports drought resiliency projects supported by drought contingency plans. All very important, particularly given the moment we are currently living in.

The Drought Preparedness Act would reauthorize these authorities, their appropriations, through 2028, would allow for continued actions by the Bureau of Reclamation. I know that the Bureau, in their written testimony, I suspect they will talk more about this during their oral testimony, has stated that they require an increased cost ceiling for the program in order to continue operations through 2028. That is provided by the bill before us, H.R. 4385.

I hope that I can work with members of the Committee on a bipartisan basis to ensure that the Bureau continues to have both the authorities and the funds that it needs to carry out these critical programs. And again, I just want to say a note of gratitude to the Chairman and to your staff, and look forward to working with the Committee to move this bill across the finish line.

With that, I yield back.

Mr. BENTZ. Thank you, Mr. Neguse. I now recognize Mrs. Kiggans for 5 minutes.

STATEMENT OF THE HON. JEN KIGGANS, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF VIRGINIA

Mrs. KIGGANS. Thank you, Mr. Chairman. I am here to speak to my bill, the Bolstering Ecosystems Against Coastal Harm Act. We affectionately refer to it as the BEACH Act, an acronym my team is very proud of, given the bill's significant role in protecting our coasts and beaches.

The BEACH Act furthers the mission of the 1982 Coastal Barrier Resources Act. This landmark conservation legislation, spearheaded by bipartisan collaboration, aimed to conserve barrier islands along the Atlantic and Gulf Coast, fostering the protection of these ecologically sensitive regions. By barring the use of Federal funds for commercial development, CBRA sought to preserve the biodiversity and ecological balance of our coastlines, safeguard habitats for countless species, and protect human communities from storm surges and erosion, all while being a thoughtful steward of taxpayer dollars.

The BEACH Act would enact the updated CBRA maps proposed by the U.S. Fish and Wildlife Service, including almost 100,000 new acres added in Virginia. I represent Virginia's 2nd District, including our Eastern Shore, almost the entirety of which remains underdeveloped and protected by CBRA. CBRA restricts the use of Federal funding for development in these areas, keeping taxpayer dollars out of risky commercial investments, and simultaneously protecting our most valuable coastlines.

Virginia's coastal ecosystems play a crucial role in the state's environmental, economic, and cultural identity. The barrier islands and coastal wetlands acts as the first line of defense against storm surges, protecting inland communities as well as vital infrastructure. Moreover, our state's coasts are home to all sorts of wildlife, all relying on the health and longevity of these ecosystems. Updating the maps is essential to reflect changes in barrier configuration, identify new areas for inclusion, and ensure the optimal conservation of our shoreline.

I wanted to thank the witnesses for being here and just for being interested in our bills today, especially Dr. Hein. We love working

with VIMS, and we are excited to get down for a tour one day. And we have a couple people from my district here today, so thank you very much just for attending.

I yield back.

Mr. BENTZ. Thank you, Mrs. Kiggans. I now recognize Dr. Murphy for 5 minutes.

STATEMENT OF THE HON. GREGORY F. MURPHY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Dr. MURPHY. Thank you, Mr. Chairman. I am blessed to introduce H.R. 2437 to revise the boundaries of a unit of the John H. Chafee Coastal Barrier Resources System in Topsail, North Carolina, and for other purposes.

This is essentially a fairly clean bill that the U.S. Fish and Wildlife Service wrongly designated the north end of Topsail Island. And this is going to essentially correct a 40-year mapping error made by the U.S. Fish and Wildlife Service. My predecessor, Walter B. Jones, Jr., tried many years to get this error corrected, and hopefully this will get done now.

The U.S. Fish and Wildlife Service wrongly designated the north end of Topsail Island, comprising the town of North Topsail Beach, as being in the Coastal Barrier Resources System, despite the fact it was already under development and had a great deal of infrastructure actually in the ground at the time of designation. My bill would correct this error by taking out a small area from the Coastal Barrier Resources System.

The town of North Topsail Beach has provided the Subcommittee with extensive research documenting the existence of that infrastructure. This error wrongly prohibited the town of North Topsail Beach and many homeowners from accessing Federal programs, including the FAIB, IP, the Veterans Administration loans, and U.S. Army Corps of Engineers shore protection projects.

Today, you will hear the testimony of one of my constituents, Alderman Tom Leonard, who will give you a great amount of detail on this matter.

This is just about fair treatment under the law. Areas that were already under development when the Chafee Coastal Barrier Resource System law was passed in 1982 were not supposed to be designated within the Coastal Barrier Resources System. The Federal Government made an error with North Topsail Beach, and I am asking that error be corrected.

Lastly, the staff director of the Subcommittee has actually been on the ground and looked at the area in North Topsail Beach firsthand.

Thank you again for your consideration. I look forward to working with you and the members of the Committee to hopefully move this bill forward. Thank you very much.

I will yield back my time.

Mr. BENTZ. Thank you, Dr. Murphy.

I will now introduce our second panel: Mr. Matt Strickler, Deputy Assistant Secretary for Fish and Wildlife and Parks with the Department of the Interior; Dr. Christopher Hein, Wakefield Associate Professor of Marine Science at the Virginia Institute of

Marine Science in Gloucester Point, Virginia; Mr. Steve Lynn, Manager for the Midvale Irrigation District in Pavillion, Wyoming; Mr. William Stiles, Senior Advisor for Wetlands Watch in Norfolk, Virginia; and Mr. Tom Leonard, Alderman for the Town of North Topsail Beach, North Carolina.

Let me remind the witnesses that under Committee Rules, they must limit their oral statements to 5 minutes, but their entire statement will appear in the hearing record.

To begin your testimony, please press the "talk" button on the microphone.

We use timing lights. When you begin, the light will turn green. When you have 1 minute remaining, the light will turn yellow. And at the end of 5 minutes, the light will turn red, and I will ask you to please complete your statement.

I will also allow all witnesses to testify before Member questioning.

I now recognize Mr. Strickler for 5 minutes.

STATEMENT OF MATT STRICKLER, DEPUTY ASSISTANT SECRETARY, FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR, WASHINGTON, DC

Mr. STRICKLER. Good morning, Chairman Bentz, Ranking Member Huffman, and members of the Subcommittee. It is good to see you again. I appreciate the opportunity to testify today on two bills related to the John H. Chafee Coastal Barrier Resources System.

Coastal barriers and associated natural features like wetlands provide essential protection for communities against storms and erosion. They also provide important spawning, nursery, nesting, and feeding areas for fish and wildlife. Coastal barriers are highly dynamic landscapes, and their ability to absorb the impacts of strong winds, waves, and currents is what makes them so effective at sheltering the mainland behind them. It is also what makes them risky places to build.

Congress understood this when it passed the Coastal Barrier Resources Act, or CBRA, in 1982. While CBRA does not prevent private property owners from developing their land, it does prevent them from receiving subsidies from the Federal Government that would encourage them to do so, or that would expend taxpayer dollars to help them rebuild.

In passing CBRA and in reauthorizing and expanding the System multiple times, Congress has sent a clear and fair message: barrier islands are dangerous places; develop them at your own risk.

This market-based approach to conservation and hazard mitigation has been incredibly effective. A peer-reviewed study published in the Journal of Coastal Research in 2019 estimated that CBRA has saved more than $9 billion in Federal disaster aid alone, and is projected to save billions more in the future. Development rates within the System are about 75 percent lower than outside the System.

The Fish and Wildlife Service is responsible for administering CBRA, which includes maintaining and updating the official maps of the System, making recommendations to Congress for changes to

the boundaries, and consulting with Federal agencies on CBRA compliance. It is up to Congress to consider and adopt recommended map revisions into law.

The complete set of System maps was last comprehensively revised in 1990, using now-antiquated techniques and base maps. Since 2000, the Service has worked with Congress on a comprehensive map modernization process that utilizes 21st century mapping technology, includes public input, and is underpinned by statutory development criteria and documented objective mapping protocols. To date, the Service has produced comprehensively revised and modernized maps for more than 30 percent of the System's acreage. Congress has adopted a subset of these maps covering 9 percent of the System. The Service has also digitized but not comprehensively revised the remaining maps for the System.

H.R. 5490, the Bolstering Ecosystems Against Coastal Harm Act, would reauthorize CBRA and adopt comprehensively revised maps prepared by the Service for more than 450 System units. This would correct past mapping errors, including removing hundreds of private properties that were accidentally included in the System. Adopting these maps would also add areas to the System, reducing development pressure and helping conserve natural storm buffers and maintain habitat for fish and wildlife. The bill includes a grandfathering clause for existing structures within units included in the legislation. It would also create a disclosure requirement for real estate transactions.

The Administration strongly supports reauthorization of CBRA, which has enjoyed bipartisan support in Congress and the White House for more than four decades. We also strongly support enactment of the recommended revised maps that the Service has transmitted to Congress. The Administration supports H.R. 5490 with some recommended changes, and we thank Representative Kiggans for introducing this legislation.

While the BEACH Act takes important steps, the Administration recommends additional amendments to revise the definition of a coastal barrier to include areas that are and will be vulnerable to coastal hazards in the future; assess the application of CBRA to certain high-hazard coastal areas other than barrier islands through a pilot project; and authorize adequate funding for the Service to fully carry out its mandates under CBRA.

We also look forward to working with the Subcommittee to clarify a provision related to Otherwise Protected Areas, which we believe has negative unintended consequences as currently written.

The other bill under discussion related to CBRA, H.R. 2437, would require the Secretary to propose a revised map for CBRA Unit L06 on Topsail Island, North Carolina. The bill would remove a substantial area from the System, including many structures that were built after Congress put the land in the System in 1982. The Administration opposes the bill.

The designation of this unit has been thoroughly reviewed and reaffirmed multiple times by Congress, the Service, and the courts. Most recently, in 2018, Congress adopted a comprehensively reviewed and revised map. This map followed the Service's objective mapping process to remove land and structures that were included in error, and was subject to public review and comment.

The Service does not recommend any further substantial changes to the boundary, as it would be inconsistent with the objective mapping criteria that the Service applies for any recommended map revisions. However, the Service does support the adoption of our 2021 map for Unit L06, which is included in Title 2 of H.R. 5490, and this map would correct a small mapping and technical error, removing about 2.5 acres and two homes from the System.

We appreciate our long partnership with the Subcommittee in administrating CBRA, and look forward to discussing our views with the Subcommittee.

[The prepared statement of Mr. Strickler follows:]

PREPARED STATEMENT OF MATTHEW J. STRICKLER, DEPUTY ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR

ON H.R. 5490 AND H.R. 2437

Introduction

Good morning, Chairman Bentz, Ranking Member Huffman, and Members of the Subcommittee. I am Matthew J. Strickler, Deputy Assistant Secretary for Fish and Wildlife and Parks within the Department of the Interior (Department). I appreciate the opportunity to testify today on two bills related to the John H. Chafee Coastal Barrier Resources System (CBRS or System).

The U.S. Fish and Wildlife Service's (Service) mission is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. Congress' stated objectives in the bipartisan enactment of the Coastal Barrier Resources Act (CBRA or Act) in 1982 were to save lives; save taxpayer dollars; and conserve coastal barrier habitat by restricting new federal expenditures and financial assistance, as such expenditures encourage development in these sensitive and dynamic areas. Coastal barriers and the associated wetlands provide essential spawning, nursery, nesting, and feeding areas for fish and wildlife, and also serve to protect inland coastal communities from erosion and coastal storms and support American jobs in the fishing, recreation and outdoor tourism industries. I am proud of our work in administering CBRA to achieve its objectives. These objectives align with our mission and have been supported by both Republican and Democratic administrations alike over the last four decades.

When President Reagan signed CBRA into law, he characterized it as a program that meets a national problem with less federal involvement, not more.[1] The law leverages the free market to achieve its goals. The law does not prohibit or regulate development, but reduces federally funded incentives for new development in hurricane- and erosion-prone areas, where building puts people in harm's way and may otherwise not be economical. Recent studies have shown that CBRA has been highly successful in achieving its objectives. The law is estimated to have saved over $9 billion in federal disaster aid and is projected to save billions more into the future as climate change exacerbates existing hazards along our coasts.[2] Urban development rates within the CBRS are about 75 percent lower than those outside of the CBRS, with density levels similar to parks and wildlife refuges.[3] Parcels within the CBRS are significantly less likely to be armored with hardened

[1] Ronald Reagan, "Statement on Signing the Coastal Barrier Resources Act," October 18, 1982, The Public Papers of President Ronald W. Reagan, Ronald Reagan Presidential Library, accessed August 29, 2023, https://www.reaganlibrary.gov/archives/speech/statement-signing-coastal-barrier-resources-act.

[2] Andrew S. Coburn and John C. Whitehead, "An Analysis of Federal Expenditures Related to the Coastal Barrier Resources Act (CBRA) of 1982," Journal of Coastal Research 35, no. 6 (November 2019): 1358-1361, accessed August 29, 2023, https://doi.org/10.2112/JCOASTRES-D-18-00114.1.

[3] Jordan Branham et al., "Removing federal subsidies from high-hazard coastal areas slows development," Frontiers in Ecology and the Environment 20, no. 9 (June 21, 2022): 500-506, accessed August 29, 2023, https://doi.org/10.1002/fee.2532; Kyle Onda et al., "Does Removal of Federal Subsidies Discourage Urban Development? An Evaluation of the US Coastal Barrier Resources Act," PLOS ONE 15, no. 6 (June 2020): e0233888, accessed August 29, 2023, https://doi.org/10.1371/journal.pone.0233888.

structures such as seawalls.[4] These reductions in development and shoreline armoring result in better habitat and more resilient beaches.

The bills under consideration today seek to reauthorize CBRA and modify the boundaries of the CBRS. We offer the following background information along with our views on the two bills. We look forward to working with the Subcommittee as you consider these revisions to the law and the maps.

Overview of the CBRS and the Service's Map Modernization Efforts

With the passage of CBRA (Pub. L. 97-348) in 1982, Congress designated privately-owned areas along the Atlantic and Gulf of Mexico coasts within the CBRS. Most new federal expenditures and financial assistance, including federal flood insurance, are prohibited in designated areas. In 1990, Congress reauthorized CBRA (Pub. L. 101-591) and expanded the CBRS to include both additional private lands as well as areas held for conservation and recreation. The CBRS now encompasses 870 geographic units spanning about 3.5 million acres along the Atlantic, Gulf of Mexico, Great Lakes, U.S. Virgin Islands, and Puerto Rico coasts. The law contains exceptions for certain activities and allows pre-existing structures added in 1982 and 1990 to maintain their federal flood insurance until such time that they are substantially improved or damaged. The Service is responsible for administering CBRA, which includes maintaining and updating the official maps of the CBRS, making recommendations to Congress for changes to the boundaries, and consulting with federal agencies that propose to spend funds within the CBRS under the exceptions. Congress plays an important role in the implementation of CBRA by considering and adopting the Service's recommended map revisions into law.

The complete set of maps depicting the CBRS was last comprehensively revised in 1990 using now antiquated manual cartographic technologies and base maps. The 1990s-era maps are imprecise, difficult to use, and in some cases contain errors affecting property owners and project proponents. Congress recognized the challenges associated with the maps, and in the 2000 reauthorization of the Act (Pub. L. 106-514) directed the Service to conduct a Digital Mapping Pilot Project (pilot project). At that time, Congress also codified the development criteria that the Service must consider when evaluating whether additions to or removals from the CBRS are appropriate. The pilot project was transmitted to Congress in 2016.

In 2006, Congress reauthorized CBRA (Pub. L. 109-226) and directed the Service to modernize all the CBRS maps and recommend qualifying additions. Since then, throughout several Administrations, the Service has worked in a bipartisan manner with Congress to make significant improvements to the maps through a transparent "comprehensive map modernization" process that utilizes 21st century mapping technology, includes public input, and is underpinned by the statutory development criteria and objective mapping protocols. In 2013, the Service was provided Hurricane Sandy Supplemental funding to comprehensively modernize the maps of the CBRS along the Mid-Atlantic and New England coasts. Maps for all CBRS areas in the following nine states are included in this project: New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia, covering 16 percent of the total existing acreage of the CBRS. The Service transmitted these 176 final recommended maps to Congress on April 5, 2022, as part of our *Report to Congress: John H. Chafee Coastal Barrier Resources System Hurricane Sandy Remapping Project*.

To date, including the Hurricane Sandy maps, the Service has produced comprehensively revised maps for more than 30 percent of the CBRS acreage. Congress has adopted a subset of these maps, covering 9 percent of the CBRS (including most of the maps produced under the 2016 pilot project), through the Strengthening Coastal Communities Act of 2018 (Pub. L. 115-358) and other technical correction legislation. The Service has also digitized (but not comprehensively revised) the remaining CBRS maps through the statutorily directed 5-year review that accounts for natural changes affecting coastal barriers in the CBRS such as erosion and accretion. There remains much work to do to comprehensively revise the CBRS maps. However, the collaboration between Congress and the Service, and the involvement of the public, has helped bring the maps into the modern age, making them more accurate and user-friendly and ensuring the long-term integrity of the CBRS.

---

[4] Jordan Branham et al., "How does the removal of federal subsidies affect investment in coastal protection infrastructure?," Land Use Policy 102 (March 2021): 105245, https://doi.org/10.1016/j.landusepol.2020.105245.

H.R. 5490, Bolstering Ecosystems Against Coastal Harm Act

The Bolstering Ecosystems Against Coastal Harm Act (BEACH Act) would reauthorize CBRA and adopt comprehensively revised maps prepared by the Service for more than 450 CBRS units, including those maps prepared through the Hurricane Sandy Remapping Project and other technical correction reviews. This action would correct past mapping errors, including removing hundreds of private properties from the CBRS that, according to the Service's objective review, should not have been included in the CBRS. Adopting these maps would also add areas to the CBRS, reducing development pressure in coastal barrier habitats. This, in turn, would serve to conserve natural storm buffers and maintain habitat for many at-risk species of fish and wildlife. The bill would also require the Secretary of the Interior (Secretary) to establish a disclosure requirement for real estate transactions, require all affected agencies to revise or issue regulations and guidance as necessary to ensure compliance with the updated Act, and make many other minor and technical clarifications to the law. The Administration supports H.R. 5490 with some recommended changes, as outlined below, and looks forward to working with the Subcommittee to clarify a provision related to Otherwise Protected Areas (OPAs).

Title I—Coastal Barrier Resources Act amendments

The Administration supports the reauthorization of CBRA and the expansion of the CBRS, which will help to reduce future losses by keeping people and infrastructure out of harm's way, while also creating climate-resilient landscapes to conserve habitat for fish and wildlife. While the BEACH Act takes important steps, in light of the ever-increasing federal costs to supporting coastal development, the Administration recommends additional amendments to: (1) revise the definition of a "coastal barrier" to include areas that are and will be vulnerable to coastal hazards, such as flooding, storm surge, wind, erosion, and sea level rise; (2) assess the application of CBRA to certain high hazard coastal areas along the coasts through a pilot project; and (3) allow for adequate funding for the Service to fully carry out its mandates under CBRA. The Service would also welcome the opportunity to work with the Subcommittee and sponsor on certain additional aspects of the legislation, including definitions.

Rising sea levels are exacerbating existing vulnerabilities, exposing more coastal areas to chronic erosion, nuisance flooding, and higher storm surges. This will cause emergency response and recovery costs to skyrocket over the coming decades. Tropical storms are being supercharged by record-high ocean temperatures caused by climate change. Hurricanes Harvey, Irma, and Maria all made landfall in the U.S. as category four hurricanes within a 4-week span in 2017. By the end of that year, the unprecedented hurricane season had resulted in more than $383 billion in damage.[5] Additional destructive storms have caused hundreds of billions in damage since. In a 2019 report on climate resilience, the Government Accountability Office (GAO) stated that "enhancing climate resilience means taking actions to reduce potential future losses by planning and preparing for potential climate hazards . . ."[6] We recommend that the Subcommittee consider making further updates to the law to ensure consideration of the increasing coastal hazards associated with climate change and reduce U.S. taxpayers' financial exposure to these hazards. Taxpayers should not be on the hook to provide federal financial incentives to unwisely build in risky areas.

To position the law to address current and future conditions, the Administration recommends that CBRA be amended to enable the Service to conduct a pilot project, in consultation with the Corps of Engineers, the National Oceanic and Atmospheric Administration, and State coastal zone management agencies, to examine application of the free market CBRA approach to certain high hazard coastal areas that are not currently a part of the CBRS. The purpose of this project is to better address coastal hazards that are increasing, such as sea level rise and storm surge. In the pilot project, the Service would examine including within the CBRS certain vulnerable coastal areas, including coastal mainland areas, and submit to Congress proposed definitions and criteria and a subset of draft maps delineating those areas.

---

[5] "U.S. Billion-Dollar Weather and Climate Disasters," National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information (NCEI), 2023, accessed August 29, 2023, https://www.ncei.noaa.gov/access/billions, DOI: https://www.doi.org/10.25921/stkw-7w73.

[6] Government Accountability Office (GAO), *Climate Resilience: A Strategic Investment Approach for High-Priority Projects Could Help Target Federal Resources*, GAO-20-127 (Washington, DC.: U.S. Government Printing Office, 2019), 3, accessed August 29, 2023, https://www.gao.gov/products/gao-20-127.

This pilot project could lead to future Congressional action to comprehensively assess and identify such areas and add them to the CBRS under certain conditions. This could be a key step for the nation to enhance coastal resilience for the longer term.

The Administration supports Section 103 of the bill, which would require the Secretary, in consultation with the Secretary of Housing and Urban Development, to issue regulations requiring the owner or lessor of real property in communities affected by CBRA to disclose the fact that the property is in a community affected by CBRA. Such a disclosure requirement will significantly increase awareness of CBRA at the time of real estate transactions. A CBRS designation can limit the availability of federal flood insurance and other federal subsidies. When prospective buyers are not aware of a property's inclusion in the CBRS, they are unable to make informed decisions.

Additionally, the Administration supports the provision in Section 104 of the bill that grandfathers existing insurable structures in areas newly added to the System by this and future bills, allowing those existing structures to maintain access to federal programs. This provision (which is broader than the grandfathering policy for structures added to the CBRS in the past) will allow the approximately 90 privately-owned structures on the ground now in the recommended additions to retain their eligibility for a variety of federal programs such as flood insurance and disaster assistance. This provision also accounts for the fact that there may be structures currently under construction within the areas recommended for addition to the CBRS by grandfathering any structure completed within one year of enactment of this bill (when the restrictions on new federal funding and financial assistance go into effect).

However, the Administration has significant concerns regarding part of Section 104 of the bill that, as currently written, exempts OPAs from all prohibitions on federal expenditures and financial assistance, which would include flood insurance. We note that OPAs do in many cases contain private inholdings and other private lands. Current law prohibits new federal flood insurance for any structure within an OPA that is not used in a manner consistent with the purpose for which the area is protected. For example, private residences built within an OPA after the unit's designation are not eligible for flood insurance, but park-related structures (e.g., a visitor center) are eligible. We look forward to working with the Subcommittee on technical changes to the bill to maintain existing flood insurance restrictions within OPAs, as well as the exemption for structures used in a manner consistent with the purpose for which the area is protected.

Finally, the Administration suggests that the authorization level in Section 106 be increased to $5,000,000. The increased authorization level will allow the Service to increase its capacity to maintain and update the maps, improve public awareness of CBRA, engage in consultation with other federal agencies and update implementing regulations to align with the BEACH Act, and conduct a pilot project to better address increasing coastal hazards.

Title II—Changes to John H. Chafee Coastal Barrier Resources System maps

The BEACH Act would adopt all maps developed through the Hurricane Sandy Remapping Project, as well as revised maps for certain CBRS units in Florida, Louisiana, South Carolina, and North Carolina. Congressional adoption of these maps, which were produced by the Service, will help enhance coastal resilience by providing more accurate and accessible CBRS data for planning coastal infrastructure projects, habitat conservation efforts, and flood risk mitigation measures. Adoption of the revised maps will also correct decades-old mapping errors affecting more than 950 homes and other structures, and will also add hundreds of thousands of acres of relatively undeveloped areas that qualify for inclusion within the CBRS, consistent with Congressional direction in Pub. L. 109-226.

It is important to note that the expansion of the CBRS will not prohibit or regulate new development; rather, it will send appropriate price signals to potential developers to convey the risk associated with building on dynamic coastal barriers and ensure that the federal taxpayer does not underwrite risky development. Additionally, to ensure that existing homeowners are not adversely affected, Section 104 of Title I of the bill, discussed above, would establish a grandfathering provision for existing insurable structures in any areas added to the CBRS by this or future bills.

The Administration supports the adoption of these maps through this bill. However, we note that the maps were produced between 2016 and 2020, using the best available data and aerial imagery at the time. Because development conditions on the ground are continually changing and coastal barriers are dynamic landforms, the Service recently conducted a review of the maps referenced in Title II and found

that some minor and technical updates (none of which are new additions) are warranted to certain maps before they are adopted into law. We look forward to working with the Subcommittee on relevant updates.

We also note that the Service has prepared revised maps for eight units in Alabama and North Carolina, transmitted to Congress in 2015 and 2016 respectively, that are not included in the draft bill. These maps would correct mapping errors affecting property owners or add eligible areas to the CBRS. The Administration recommends that Congress adopt all of the final recommended maps that have been completed and transmitted to Congress since 2015.

H.R. 2437, To revise the boundaries of a unit of the John H. Chafee Coastal Barrier Resources System in Topsail, North Carolina, and for other purposes

Unit L06 of the CBRS is in Onslow County, North Carolina, and includes much of the Town of North Topsail Beach. H.R. 2437 would require the Secretary of the Interior to prepare, within 30 days of enactment, a revised map for Unit L06 that removes from the CBRS certain areas serviced by infrastructure located along North Carolina Highway 210 and New River Inlet Road in 1982. The bill would also require that the Service consider these roads to meet the statutory infrastructure criteria used to evaluate changes to the CBRS boundaries. The designation of this unit has been thoroughly reviewed by the Service and Congress in the past. Congress has examined and affirmed the boundaries of Unit L06 through the adoption of revised maps in 1990 and, applying current technology, in 2018. The Service does not recommend any further substantial changes to the boundary, as they would be inconsistent with the objective mapping criteria that the Service equitably applies for any recommended map revisions. For these reasons, as explained in more detail below, the Administration opposes H.R. 2437.

It appears that H.R. 2437 intends to remove much of the existing development within Unit L06 from the CBRS. Nearly all of this development occurred after the passage of CBRA, meaning various federal subsidies, including federal flood insurance, are not available within the unit. Property owners pursued this development without federal subsidies. We note that as written, it is not clear exactly which areas would be removed from the CBRS. For example, there are several developed areas within the unit that were not serviced by these roads at the time of designation (many homes are located along secondary roads that were not on the ground in 1982).

The Department developed the original CBRS maps as directed by Congress to identify qualifying relatively undeveloped coastal barrier areas in 1982 following a years-long process involving reviews of aerial photography, on-the-ground inspections, several public information sessions, and two comment periods. When Congress first included Unit L06 within the CBRS with the enactment of CBRA, there were approximately 35 structures and a main road on the ground. We note that when L06 was first mapped, the Department was guided by CBRS designation criteria published in the Federal Register on August 16, 1982, which stated that "the presence on a coastal barrier of a single road . . . plus associated electric transmission and water and sewer lines in this highway corridor does not constitute the necessary full complement of infrastructure necessary to support development."

After L06 was designated by CBRA in 1982, in 1983, developers and landowners filed a lawsuit against the Department and the Federal Emergency Management Agency over the designation of Unit L06. The District Court decided in favor of the Federal Government in 1984; it found that Congress' designation including the area within the CBRS was rationally related to the goals of the CBRA. The case was appealed, and the lower court's decision was upheld in 1985.

As part of a CBRA reauthorization effort, all the CBRS units, including Unit L06, were reviewed again by the Department in the mid-1980s. Part of that review included public comment periods held in 1985 and 1987. Congress then reaffirmed and expanded Unit L06 in 1990 when it reauthorized CBRA. Construction continued in the area without federal financial assistance in accordance with the free-market principles of the Act. The unit currently contains approximately 700 structures, about 95 percent of which were built since the area was designated. Today, more than four decades after its initial designation, Unit L06 is one of the most developed units in the System, and CBRA continues to shield the American taxpayers from subsidizing construction on dynamic and low-lying barrier islands as Congress intended when it enacted CBRA.

The Service comprehensively reviewed this area in response to requests received over the years from private property owners, local officials, and others who sought significant removals from Unit L06. We prepared revised maps for Unit L06 as part of the pilot project, which underwent public review in 2009. Our review found that,

although there were some structures on the ground and a main trunk line of infrastructure that ran along the length of the unit in 1982, the area still met the CBRA criteria for an undeveloped coastal barrier when it was included within the CBRS. This review was summarized in our 2014 testimony before the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs on H.R. 187, and is also described on pages E-8 and E-9 of Appendix E of our 2016 *Final Report to Congress: John H. Chafee Coastal Barrier Resources System Digital Mapping Pilot Project*. The Service's comprehensive review was the basis for revised Unit L06 maps (two maps) that were part of the pilot project that was finalized and transmitted to Congress in 2016. These two maps were then adopted by Congress via the Strengthening Coastal Communities Act of 2018 (Pub. L. 115-358) and signed into law by President Trump on December 21, 2018. These maps made appropriate technical corrections to address mapping errors (removing about 78 structures from the CBRS) and added approximately 170 qualifying acres to the CBRS (mostly wetlands).

CBRA's legislative history states that "it is in the intent of this legislation that those who choose to develop within the CBRS after enactment do so at their own risk. Recommending changes to such units for this purpose would obviously not be consistent with the intent of this legislation" (House Report 97-841 Part 1). We note that any significant removal from Unit L06 could serve to incentivize further development and redevelopment, putting more people in harm's way and costing the federal taxpayer millions in future federal flood insurance and disaster assistance payouts.

The Service does support the adoption of a revised map that we produced dated April 30, 2021, which is included in Title II of H.R. 5490. The map included in H.R. 5490 would correct one minor and technical error in the map for Unit L06, removing about 2.5 acres and two homes from the CBRS if adopted by Congress. We discovered this error in 2020 after being asked to review the mapping of a specific property. This error was primarily the result of challenges in georeferencing the original CBRS maps, combined with the quality of aerial imagery available to the Service in the early 2000s, when the boundary for Unit L06 was first digitized from the 1990 paper maps. We have determined that no further changes to the boundaries of Unit L06 are warranted.

Conclusion

The Service appreciates our long partnership with the Subcommittee in administering CBRA. Through our collaboration, we have saved the taxpayers billions of dollars, modernized the maps of the CBRS and made them more accessible to the public, maintained the integrity of the CBRS, and advanced the conservation of coastal habitat. The health of our coastal ecosystems is central to the continued existence of many species of fish and wildlife, and the Service is committed to conserving these important resources for the continuing benefit of the American people. We look forward to discussing these views with the Subcommittee and the bills' sponsors.

QUESTIONS SUBMITTED FOR THE RECORD TO MR. MATTHEW STRICKLER, DEPUTY ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR

Mr. Strickler did not submit responses to the Committee by the appropriate deadline for inclusion in the printed record.

Questions Submitted by Representative Murphy

Question 1. Would Mr. Strickler be willing to meet with Alderman Tom Leonard at North Topsail Beach to survey the 590 acres of land that H.R. 2437 would take out of CBRS zone known as Unit L06?

Mr. BENTZ. Thank you, Mr. Strickler. I now recognize Dr. Hein for 5 minutes.

STATEMENT OF CHRISTOPHER HEIN, ASSOCIATE PROFESSOR, VIRGINIA INSTITUTE OF MARINE SCIENCE, GLOUCESTER POINT, VIRGINIA

Dr. HEIN. Good morning, Chairman Bentz, Ranking Member Huffman, and members of the Subcommittee. Thank you for allowing me the opportunity to testify today.

I am an Associate Professor at the Virginia Institute of Marine Science in William and Mary. I am also a coastal geoscientist, which means my job is to study beaches, how they grow, how they erode, how they respond to storms and sea level rise. But beyond that, my expertise extends to the nearshore sand dunes, wetlands, and lagoons that are all part of what we call the Coastal Barrier Island System. I have studied coastal barriers across the U.S. East Coast, and from the Arctic to the Southern Hemisphere subtropics. For the last decade, most of that work has been in Representative Kiggans' district on Virginia's Eastern Shore.

The reason us in the scientific community are so drawn to barriers is simple: they are nearly ubiquitous across the U.S. East and Gulf Coasts, and they are one of the most dynamic landforms on Earth. They are constantly changing and reshaping in response to winds, waves, and currents. One can never visit the same barrier twice, as with every new tide or every next storm they will have changed in ways both subtle and profound.

Here I share with you a little about the Virginia Barrier Islands as a way of exemplifying the importance of Coastal Barrier Systems and the benefits of disincentivizing their development through measures such as the BEACH Act.

The island chain stretching from southern Delaware to the mouth of the Chesapeake Bay is one of the longest expanses of nearly entirely undeveloped barriers in the world, home to wildlife refuges, national seashore, state parks, and a nature conservancy preserve. These islands and their associated waters and wetlands are a conservation jewel. And it is the fact that they are largely undeveloped that makes these barrier systems just so profoundly important to the health and security of nearby coastal communities and ecosystems.

One way in which they do so is serving as speed bumps to storms approaching the coast, storms such as Hurricane Sandy in 2012 or Tropical Storm Ophelia, which struck the Mid-Atlantic just this past weekend. Although such storms can be devastating to communities and infrastructure built upon the barriers, the physical landforms and the ecosystems themselves, they are fully adapted to the waves, winds, and flooding. Dune and beach configurations may change as waters rise and fall. Sediment is moved from the beach and dunes to the rear of the barrier, and tidal currents can carve new inlets, but the natural system persists and recovers.

This process is, in fact, healthy and is, indeed, central to the future resilience of coastal barriers and the lands that they protect. And this is exactly what we witness along Virginia's Eastern Shore. Here, barriers have been moving landward at nearly 20 feet per year for over a century unimpeded by seawalls, by homes, or grocery stores. With the rare exception, they receive no costly beach nourishment and have no cement or rock walls preventing their movement. Yet, these islands, they remain miles offshore,

where they provide habitat, nesting, and feeding grounds for over 250 species of raptors, shorebirds, and songbirds. And they sit in front of more than 100,000 acres of marshes and wetlands, which are host to oyster reef sanctuaries and the largest expanse of restored eelgrass in the world, which together support shellfish aquaculture and fisheries industries worth tens of millions of dollars annually.

These barriers, they take the brunt of storms, leaving behind them relatively quiet water, even in the worst of weather. In doing so, they protect the mainland communities of the Eastern Shore. Barriers slow water entering adjacent lagoons and protect marshes, which themselves further reduce wave energy and absorb flood floodwaters. In fact, marshes are estimated to reduce annual storm damage by about $23 billion nationally. Indeed, the back barrier wetlands of New York and New Jersey likely reduced property damage from Hurricane Sandy by nearly $600 million.

And what makes the coastal barriers such as those along Virginia's Eastern Shore so indispensable is that they are not built upon. By disincentivizing development of lands within the Coastal Barrier Resources System, CBRA, with its network improved and expanded through passage of the BEACH Act, not only saves taxpayer dollars, but allows remaining undeveloped barriers and wetlands to migrate and adapt naturally to sea level rise. And it ensures their continued functionality for supporting coastal economies, recreation, and tourism, for providing habitat and myriad ecosystem services, for protecting mainland communities and infrastructure, and offering vital opportunities for scientific research and education.

On behalf of the Virginia Institute of Marine Science, William and Mary, the coastal scientific community, and the citizens of coastal Virginia, I am grateful for the Subcommittee's interest in expanding protections for these vital landforms based on the best available science, and welcome any questions.

[The prepared statement of Dr. Hein follows:]

PREPARED STATEMENT OF CHRISTOPHER HEIN, WAKEFIELD ASSOCIATE PROFESSOR OF MARINE SCIENCE, VIRGINIA INSTITUTE OF MARINE SCIENCE, WILLIAM & MARY

ON H.R. 5490

Introduction

Good morning, Chairman Bentz, Ranking Member Huffman, and Members of the Subcommittee. I am a coastal geoscientist and associate professor at the Virginia Institute of Marine Science, William & Mary. It is an honor to testify this morning on the importance of coastal barriers. These landforms and associated ecosystems are at the core of my scientific expertise: I have been studying their physical evolution, modern processes and dynamics, and sensitivities to projected increases in storminess and rates of sea-level rise for nearly 20 years. My research includes sites across the U.S. and beyond, including East Coast barriers from Maine to Florida, with an emphasis in the last decade on the largely undeveloped system of barrier islands of Virginia's Eastern Shore.

My testimony serves to provide scientific background on coastal barrier systems, the buffer between the coastal ocean and mainland human population centers and infrastructure. These elongate, generally shore-parallel bodies of sand (barrier spits and islands) protect the mainland coast from coastal impacts of sea-level rise and devastating storms. Coastal barriers are found along ~15% of the world's coastlines, and nearly the entire U.S. East and Gulf coasts; in fact, nearly a full quarter of the world's barriers islands are found within the United States, accounting for ~6500

mi[2] of land area.[1,2] Together with their backbarrier estuaries, lagoons, tidal flats, and wetlands, coastal barriers serve as a natural storm buffer; include some of the most popular tourist and recreational destinations in the U.S.; provide habitat for a wide variety of wildlife, including threatened and endangered species, migratory waterfowl, and juveniles of recreationally and commercially important species; and sequester climate-altering carbon dioxide (CO_2) in the form of organic-rich "blue carbon" reservoirs. In short, as noted in the 1982 Coastal Barrier Resources Act, coastal barriers "contain extraordinary scenic, scientific, recreational, natural, historic, archeological, cultural, and economic importance." Protection of these dynamic, yet sensitive, coastal systems yield immense ecosystem, societal, and economic benefits, both measurable and intangible.

The Unique Role of Undeveloped Coastal Barriers

The 1982 Coastal Barrier Resources Act (CBRA) defines *undeveloped coastal barriers* "as:

A. a depositional geologic feature (such as a bay barrier, tombolo, barrier spit, or barrier island) that (i) consists of unconsolidated sedimentary materials; (ii) is subject to wave, tidal, and wind energies, and; (iii) protects landward aquatic habitats from direct wave attack; and

B. all associated aquatic habitats, including the adjacent wetlands, marshes, estuaries, inlets, and nearshore waters;

but only if such feature and associated habitats (i) contain few man-made structures and these structures, and man's activities on such feature and within such habitats, do not significantly impede geomorphic and ecological processes, and (ii) are not included within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization as defined in section 170(h)(3) of the Internal Revenue Code of 1954, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes."

These definitions largely follow those accepted within the scientific community. What is missing from this legal designation is the fact that coastal barriers are among the—if not *the*—most dynamic landforms on Earth. In their natural state, they are constantly undergoing reworking by waves, wind, and currents; they shape and reform in response to, and following, storm impacts; and, at any time, there are barriers undergoing long-term (decadal or longer) phases of progradation (widening), elongation, accretion, erosion (narrowing), breaching, or migration. Indeed, one can never visit the "same" barrier twice, as the landform and its associated habitats are constantly adjusting to ever-changing conditions at the intersection of land, ocean, and atmosphere. It is this dynamism that makes undeveloped coastal barriers such environmental oases, and it is the resilience of these systems—their ability to "regenerate" following major storm impacts—that makes them so vital to the protection of mainland communities and infrastructure.

Most barriers formed thousands of years ago, and often miles offshore of their present locations. Sea-level rise since that time has driven these landforms onshore, while during the same time the mainland behind them has flooded. This process of barrier rollover (landward migration) occurs largely through a process called "overwash", in which storm waves and surge overtop the barrier and transport its beach sand to the rear of the barrier and into the lagoon. It is this process through which these barriers (whether mainland-attached spits or offshore islands) maintain elevation above sea level. It is also what allows these coastal barriers to preserve and protect adjacent ecologically and economically rich backbarrier environments, characterized by extensive estuaries, lagoons, tidal flats, submersed aquatic vegetation, and intertidal wetlands (marshes and/or mangroves). However, this is just one of myriad services of coastal barriers and their associated backbarrier systems—particularly those which are undeveloped and allowed to naturally adapt to changing atmospheric and oceanographic forcings.

---

[1] Stutz, M.L. and Pilkey, O.H., 2011. Open-ocean barrier islands: global influence of climatic, oceanographic, and depositional settings. *Journal of Coastal Research*, v. 27, p. 207-222. https://doi.org/10.2112/09-1190.1.

[2] McNamara, D.E., & Lazarus, E.D., 2018. Barrier islands as coupled human-landscape systems, In: Moore, L.J., and Murray, A.B., *Barrier Dynamics and Response to Changing Climate*, Springer, p. 363-383. https://link.springer.com/chapter/10.1007/978-3-319-68086-6_12

Coastal Barriers Provide Protection to Mainland Communities and Infrastructure

In the U.S., approximately 40% of the population lives in coastal counties,[3] and there are 180 coastal municipalities along the coasts of the continental U.S. with populations of >50,000 and land areas with elevations at or below about 20 ft above mean sea level.[4] Infrastructure within the coastal zone totals $3 trillion along the East and Gulf Coasts alone. Total insured property values for coastal states exceed $10 trillion.[5] And globally, many of the densest coastal population centers are within the world's six "hurricane belts", with that spanning the U.S. East and Gulf Coast having experienced the highest economic losses in the world due to storms.[6]

Coastal barriers and their associated backbarrier lagoons and wetlands serve as a "speed bump" to storms as they approach the coast—storms such as Hurricane Sandy in October 2012, or Tropical Storm Ophelia, which struck the Mid-Atlantic coast just this past weekend. It was the devastation of Hurricane Sandy that initiated the process of modernizing the Coastal Barrier Resources System (CBRS) (first established by the 1982 CBRA) along much of the U.S. East Coast through funding provided by the January 2013 Disaster Relief Appropriations Act (Public Law 113-2); these updated maps and recommendations were presented in a comprehensive 2022 Report to Congress authored by the U.S. Fish and Wildlife Service (USFWS).[7]

Some of the worst damage from Hurricane Sandy (2012) was along the coastal barriers that front the mainlands of New Jersey and New York. However, the impacts were not to the physical system of sand, mud, water, and wetlands that comprise the barrier systems: those are resilient; configurations may change as flood waters rise and fall, waves move sediment across the system, and tidal currents carve inlets, but the natural system persists. Undeveloped coastal barrier systems function under the rules of physics. Rather, the risk from these storm impacts lies at the intersection with human communities and infrastructure. And this is where coastal barriers and their associated backbarrier aquatic habitats play an indispensable role in mainland protection.

Coastal barriers and beaches bear the brunt of ocean storm waves during hurricanes and nor'easters, leaving only small, locally formed wind waves in backbarrier lagoons. Barriers greatly decrease wave heights, protecting mainland communities and reducing erosion of mainland and backbarrier marshes. By providing only narrow openings through which water can flow (tidal inlets), coastal barriers substantially retard the volume of water flooding adjacent backbarriers, reducing storm surge and attendant mainland flooding. Further, these coastal barriers support the presence of coastal wetlands, which themselves reduce wave energy and absorb floodwaters: they are estimated to hold an annual average storm-protective services value of ~$4.6 million/mi^2 (nationwide, ~$23 billion/year; ref. 3), with higher protective benefits in states with weaker building codes.[8] To wit, it is estimated that backbarrier wetlands reduced property damage from Hurricane Sandy by $567 million in New York and New Jersey alone.[9] The benefits were smaller but still profound distant from the epicenter of the storm's landfall. In Members Kiggans' and Wittman's homes of coastal Virginia, the protective value of wetlands (not all located behind barrier islands) from Hurricane Sandy is estimated at $10 million; and in Member Magaziner's district in Rhode Island, the value is $300,000.[9]

---

[3] National Oceanic and Atmospheric Administration Office for Coastal Management (NOAA-OCM), 2023. Fast Facts: Natural Infrastructure. https://coast.noaa.gov/states/fast-facts/natural-infrastructure.html accessed 24 September 2023.

[4] Weiss, J.L., Overpeck, J.T. and Strauss, B., 2011. Implications of recent sea level rise science for low-elevation areas in coastal cities of the conterminous USA, *Climatic Change*, v. 105, p. 635-645. https://doi.org/10.1007/s10584-011-0024-x.

[5] Insurance Journal, 2013. *Insured Property Values in Coastal States Top $10 Trillion; Florida Has Most at Risk; Miami Ranks 2nd Among Metros*, online 17 June 2013, accessed 24 September 2023. https://www.insurancejournal.com/magazines/features/2013/06/17/295207.htm

[6] Martinez, M.L., Costanza, R. and Perez-Maqueo, O., 2011. Ecosystem services provided by estuarine and coastal ecosystems: Storm Protection as a service from estuarine and coastal ecosystems. In: Wolanski, E., McLusky, D., *Treatise on Estuarine and Coastal Science*, Academic Press, p. 129-146, https://doi.org/10.1016/B978-0-12-374711-2.01207-9.

[7] Hatch, K., Niemi, K., Wright, D., 2022. *Report to Congress: John H. Chafee Coastal Barrier Resources System Hurricane Sandy Remapping Project*, Washington, DC.: U.S. Fish and Wildlife Service (USFWS), 156 p. https://www.fws.gov/sites/default/files/documents/Hurricane-Sandy-CBRS-Remapping-Report-to-Congress-2022_0.pdf

[8] Sun, F. and Carson, R.T., 2020. Coastal wetlands reduce property damage during tropical cyclones. *Proceedings of the National Academy of Sciences*, v. 117, p. 5719-5725. https://doi.org/10.1073/pnas.1915169117

[9] Narayan, S., Beck, M.W., Wilson, P., et al., 2017. The value of coastal wetlands for flood damage reduction in the northeastern USA. *Scientific Reports*, v. 7, p. 9463. https://doi.org/10.1038/s41598-017-09269-z.

Coastal Barriers Provide 'Ecosystem Services'

Beyond protective benefits for backbarrier and mainland communities, undeveloped coastal barriers provide and protect important habitats that sustain threatened and endangered species and maintain recreational and commercial fisheries. By intercepting dissolved and particulate matter from land and ocean, vegetation associated with coastal barrier beach and dunes acts as natural biofilters and support the breakdown of organic materials and pollutants. Those same dunes can temporarily store storm water. Beach and dune sands provide habitat that supports unique and diverse micro-, meso-, and macrofaunal communities including significant habitat and nesting sites for pinnipeds, sea turtles, shorebirds (including the endangered piping plover), and songbirds; and enhances species richness and diversity. In addition, coastal barriers protect wetlands and submersed aquatic vegetation beds that in turn serve as long-term carbon storage reservoirs, provide food resources to a wide variety of wildlife, including threatened and endangered species, migratory waterfowl, while at the same time serve as nursery habitat for larvae and juveniles of economically important species, such as bait and commercial fishes.

A Contrast with Developed Barriers

With ~2.3 billion tourists visiting annually, beaches (including those on coastal barriers) are the most popular tourist and recreational destinations in the country, contributing ~$357 billion (in 2023 USD) annually to the U.S. economy. Coastal states such as Alabama, Alaska, California, Florida, Hawaii, Louisiana, Oregon, Rhode Island, and Virginia receive 85% of annual tourism-related revenues in the U.S., supporting 2.5 million jobs and generating $45 billion in taxes.[10] However, coastal erosion—largely associated with storm impacts—affects ~85–90% of beaches in the U.S.[11] and is responsible for >$500 million per year in property damage, including land losses and structure impairments.[12] To counter this, developed barriers and beaches have received ~3600 sand nourishment projects, totaling ~1.7 trillion cubic yards, and at a cost of nearly $9 billion (91% since 1960).[13] The vast majority (>83%) of these projects have been to beaches in California, Florida, New Jersey, North Carolina, New York, and Louisiana. Combined with hard and soft engineering approaches (*e.g.*, installation of seawalls, groins, jetties, breakwaters, etc.), this approach has largely prevented the natural landward movement of developed barriers towards the mainland, and migration of coastal wetlands onto uplands in response to sea-level rise. In fact, in many places, such as the New Jersey Shore, barriers have experienced net progradation (growth) in recent decades, because of repeated nourishments and shoreline hardening.

However, these shoreline-stabilization activities are racked with problems, ranging from ecological impacts to ever-increasing costs of a finite resource (sand), to racial and wealth inequities in application. For example, development disrupts the connection between barriers and their adjacent lagoons and wetlands, interrupting the natural, storm-induced landward transfer of sand that helps to sustain wetlands in the face of sea-level rise. Shoreline stabilization has been shown to further promote larger and more extensive development.[14] And, over the long term, activities required to support continued development and occupation of coastal barriers leave the barriers vulnerable to wholesale drowning and deterioration.[15] None of these challenges exist for undeveloped coastal barriers. Indeed, in addition to

---

[10] Houston, J.R., 2018. The economic value of America's beaches—A 2018 update, *Shore & Beach*, v. 86, p. 3-13. https://asbpa.org/wp-content/uploads/2018/05/Houston_Spring-2018_86_2_color.pdf

[11] Heinz Center, 2000. Evaluation of Erosion Hazards. The H. John Heinz III Center for Science, Economics and the Environment, 253 p. https://www.fema.gov/pdf/library/erosion.pdf

[12] National Oceanic and Atmospheric Administration (NOAA), 2013. *National Coastal Population Report*, Washington, DC.: Department of Commerce, 22 p., https://coast.noaa.gov/digitalcoast/training/population-report.html.

[13] Elko, N., Briggs, T.R., Benedet, L., et al, 2021. A century of US beach nourishment. *Ocean & Coastal Management*, v. 199, p. 105406. https://doi.org/10.1016/j.ocecoaman.2020.105406

[14] Armstrong, S.B., Lazarus, E.D., Limber, P.W., et al., 2016. Indications of a positive feedback between coastal development and beach nourishment. *Earth's Future*, v. 4, p. 626-635. https://doi.org/10.1002/2016EF000425.

[15] Miselis, J.L. and Lorenzo-Trueba, J., 2017. Natural and human-induced variability in barrier-island response to sea level rise. *Geophysical Research Letters*, v. 44, p. 11,922-11,931. https://doi.org/10.1002/2017GL074811.

placing communities and infrastructure at risk, development on coastal barriers can remove many of the protective, economic, and ecosystem values of coastal barriers.[16]

An Example from Virginia's Undeveloped Barrier Islands

Along the 70-mile-long seaside of the Eastern Shore of Virginia (located within Representative Kiggans' 2nd Congressional District) lies 13 largely pristine, undeveloped barrier islands. Only one of the ocean-facing islands has experienced any significant development: Wallops Island, home to the NASA Wallops Flight Facility, the Virginia Mid-Atlantic Regional Spaceport, and the Navy's Surface Combat Systems Center. Approximately 215 mi^2 (including >68 mi of beachfront) of these coastal barrier systems are protected from development by state and federal agencies and non-governmental organizations. These islands are home to The Nature Conservancy's Virginia Coast Reserve; a National Science Foundation Long-Term Ecological Research site; the Assateague National Seashore; and National Wildlife Refuges on Wallops, Assawoman, Chincoteague, and Fisherman islands.

These islands, along with the lagoons, wetlands, and mainland Eastern Shore they support and protect contain ~$14 billion in coastal infrastructure and $15 million/yr shellfish aquaculture and fisheries industries.[17] The total annual spending associated with tourism at the Chincoteague National Wildlife Refuge (largely located on the undeveloped Assateague Island) is estimated at $315 million, supporting 3766 jobs.[18] The local clam aquaculture industry exceeds $61 million/year and supports nearly 700 jobs.[19]

The undeveloped coastal barriers of the Virginia Eastern Shore provide ample protective and ecological benefits to the communities, ecosystems, and economy of the Eastern Shore. As one of the last remaining expanses of coastal wilderness on the Atlantic, the coastal barriers of the Eastern Shore are a conservation and restoration jewel. This region boasts recognition as a United Nations International Biosphere Reserve, a U.S. Department of the Interior National Natural Landmark, a Western Hemisphere International Shorebird Reserve Network Site, and an Atlantic Coast Joint Venture Focus Area. The islands themselves provide habitat, nesting, and feeding grounds to over 250 species of raptors, shorebirds, and songbirds.[20] The adjacent lagoons are host to approximately 60 acres of restored oyster reef; 2000 acres of oyster reef sanctuaries; 5000 acres of restored eelgrass meadows (the largest seagrass restoration project in the world); and the reintroduced bay scallop. Additionally, saltmarshes and seagrass beds protected by the fronting barriers reduce the volume of water moving towards the mainland by up to 15% during normal tidal cycles, and more during storms.[21]

The protective, economic, and ecosystem value of the Virginia Barrier Islands is owed largely to the fact that they are *undeveloped*. These barriers move landward at rates of >20 feet/year, largely in response to storm-driven overwash. The cost to taxpayers of this dynamic movement? Next to nothing. Along heavily developed barriers of large portions of the New Jersey, North Carolina, Florida, and Gulf coasts, storm impacts flood islands and work to move them landward, creating a problematic and deeply costly scenario for the populations and infrastructure of those islands. In contrast, the wind, waves, and floodwaters that strike the Virginia Barrier Islands are felt only by the sand and vegetation of those islands (in most cases): the islands move and adapt, receiving the brunt of the storm and protecting

---

[16] Feagin, R.A., Smith, W.K., Psuty, N.P., et al., 2010. Barrier islands: coupling anthropogenic stability with ecological sustainability. *Journal of Coastal Research*, v. 26, p. 987-992. https://doi.org/10.2112/09-1185.1.

[17] Accomack-Northampton Planning District Commission (A-NPDC), 2015. *Commercial and Recreational Use Assessment Report—Seaside of Virginia's Eastern Shore*, 82 p. https://www.esvaplan.org/wp-content/uploads/2022/03/2013-Recreational-Use-Assessment-Report-ANPDC.pdf

[18] Clower, T.L., and Bellas, D.D., 2017. *Socio-economic Impacts of Conserved Land on Virginia's Eastern Shore*, Center for Regional Analysis, George Mason University; Urban Analytics, Inc., 99 p. https://www.dcr.virginia.gov/land-conservation/document/lc-es-econ-imp-2014.pdf

[19] Murray, T.J., 2014. Economic Activity Associated with Commercial Fisheries and Shellfish Aquaculture in Northampton County, Virginia, VIMS Marine Resource Report No. 2014-12, Gloucester Point, VA: Virginia Sea Grant, Communications, Virginia Institute of Marine Science, 12 p. https://www.vims.edu/research/units/centerspartners/map/_docs/docs_aqua/MRR2014_12.pdf

[20] The Nature Conservancy (TNC), 2023. *Places We Protect: VVCR Barrier Islands, Virginia.* accessed 23 September 2023. https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/vcr-barrier-islands/.

[21] Nardin, W., Larsen, L., Fagherazzi, S., and Wiberg, P., 2018. Tradeoffs among hydrodynamics, sediment fluxes and vegetation community in the Virginia Coast Reserve, USA, *Estuarine, Coastal and Shelf Science*, v. 210, p. 98-108. https://doi.org/10.1016/j.ecss.2018.06.009

the mainland and ecosystems landward of the islands. This allows these undeveloped coastal barriers and the ecosystems they support to remain conservation jewels, with benefits for the citizens of the Commonwealth today and into the future.

The Future of Coastal Barriers: Expanding the Coastal Barrier Resources System through the BEACH Act

Human-induced climate change presents an immediate threat to coastal communities worldwide. As a result, the value of the protective services of barriers and associated wetlands is projected to increase with accelerating climate change and growing development pressures. The threat to coastal systems and communities grows annually not only because increasing of accelerating rates of sea-level rise and increases in storm frequency and intensity, but also because of increasing population density and coastal infrastructure placed within high-risk coastal zones. For example, between 1970 and 2010, coastal shoreline counties added 3.5 times more people per square mile than the nation as a whole.[12] Along the U.S. East Coast, these new residents are challenged with some of the highest rates of sea-level rise in the country; in the Mid-Atlantic specifically, they are more than twice the global average, already leading to widespread "sunny day" and recurrent nuisance flooding. Coupled with hurricanes and nor'easters, these impacts are likely to cost billions of dollars in property damage in the U.S. by mid-century, with accelerated risk in the Mid-Atlantic.[22] The threats are widespread, including to developed coastlines, built infrastructure and hardened landscapes, agricultural lands and forest ecosystems, and groundwater resources. Importantly, many of these changes will occur irrespective of the unlikely immediate reduction in CO_2 emissions that is required to slow the pace of climate change. For example, Mariotti & Hein[23] found that undeveloped barriers are primed for rapid migration, even in the highly improbable case in which sea levels stabilize at current elevations. The case is more dire along developed coasts, where stabilization of many open-ocean beaches as well as upland coastal margins (*e.g.*, marsh-forest boundaries) will fundamentally impact coastal ecosystem size and functionality, leading to reduced and deteriorating coastal habitats and attendant protective and ecosystem services.[24]

The CBRA established the Coastal Barrier Resources System (CBRS), encompassing ~3.5 million acres along the Atlantic, Gulf of Mexico, Great Lakes, U.S. Virgin Islands, and Puerto Rico coasts. The CBRA established a "program of coordinated action by Federal, State, and local governments . . . critical to the more appropriate use and conservation of coastal barriers." As a result of this Act, development rates and densities of hazard-prone coastal areas substantially decreased,[25] and 97% of all CBRS units remained undeveloped or have experienced minimal development,[26] allowing them to continue to serve their full potential for coastal protection and habitat. Further, federal expenditures associated with coastal disasters were decreased by ~$9.5 billion, and forecasts are that—without any substantial changes to the CBRS system—the fiscal benefits of the CBRA over the next 50 years will be more than ten times greater than historical benefits: depending on land development patterns and rates and storm impacts, the CBRA is likely to contribute between $8.6 and $63 billion in disaster-relief savings by 2048, and between $11 and $109 billion by 2068.[27]

The Bolstering Ecosystems Against Coastal Harm (BEACH) Act seeks to give congressional approval to update the CBRA System using new and detailed mapping undertaken by the USFWS following Hurricane Sandy. Additionally, the bill

---

[22] Neumann, B., Vafeidis, A.T., Zimmermann, J. and Nicholls, R.J., 2015. Future coastal population growth and exposure to sea-level rise and coastal flooding-a global assessment. *PloS One*, v. 10, p. e0118571. https://doi.org/10.1371/journal.pone.0131375.

[23] Mariotti, G., Hein, C.J., 2022. Lag in response of coastal barrier-island retreat to sea-level rise, *Nature Geoscience*, v. 15, p. 633-638. https://www.nature.com/articles/s41561-022-00980-9

[24] Hein, C.J. and Kirwan, M.L., 2024. Marine transgression in modern times, *Annual Reviews of Marine Science*, v. 16, in press. https://doi.org/10.1146/annurev-marine-022123-103802

[25] Onda, K., Branham, J., BenDor, T.K., et al, 2020. Does removal of federal subsidies discourage urban development? An evaluation of the US Coastal Barrier Resources Act. *PloS one*, 15(6), p.e0233888. https://doi.org/10.1371/journal.pone.0233888.

[26] GAO, 2007. *Coastal Barrier Resources System: Status of Development that has Occurred and Financial Assistance Provided by Federal Agencies*, Washington, DC.: U.S. Government Accountability Office (GAO), GAO-07-356, v. 10, accessed 24 September 2023. https://www.gao.gov/products/gao-07-356.

[27] Coburn, A.S. and Whitehead, J.C., 2019. An analysis of federal expenditures related to the Coastal Barrier Resources Act (CBRA) of 1982. *Journal of Coastal Research*, v. 35, p. 1358-1361. https://doi.org/10.2112/JCOASTRES-D-18-00114.1

makes improvements to CBRA that make it more transparent and flexible. As detailed in the USFWS report,[7] these goals will be accomplished through:

- removal from the CBRS of 969 acres of land above mean tide ('fastland') and 392 acres of wetlands and open water that were apparently mistakenly included in the original Act.
- addition to the CBRS 11,102 acres of fastland and 266,848 acres of associated aquatic habitat, including 3,240 acres of privately owned fastland.
- net reclassification of 28,956 acres from System Unit to 'Otherwise Protected Area'.

Together, these changes would add a net 276,589 acres to the CBRS, expanding it to a total of 846,918 acres of protected, largely undeveloped coastal barrier and wetlands. Doing so would allow for continued and expanded maintenance of coastal barrier systems, such as those along Virginia's Eastern Shore, in an undeveloped state. This will allow them to adapt naturally to sea-level rise and will help ensure their continued roles in supporting coastal economies, recreation, and tourism; providing habitat and myriad ecological services; protecting mainland communities and infrastructure; and offering vital opportunities for scientific research and education.

Conclusion

I have herein carefully limited my testimony to scientific facts: the myriad roles of coastal barriers and the increasing threats they face from climate changes. My intent is to lay out the tremendous protective, economic, and ecosystem benefits provided by coastal barriers and their associated estuaries, lagoons, tidal flats, and wetlands; services which the science is clear are enhanced through policies that allow those to remain in their most natural state. On behalf of the Virginia Institute of Marine Science, William & Mary, the coastal scientific community, and the citizens of coastal Virginia, I am grateful for the Subcommittee's interest in expanding protections for these vital landforms and ecosystems based on the best-available science from the USFWS, and welcome any questions or concerns.

Mr. BENTZ. Thank you, Dr. Hein. I now recognize Mr. Lynn for 5 minutes.

STATEMENT OF STEVE LYNN, MANAGER, MIDVALE IRRIGATION DISTRICT, PAVILLION, WYOMING

Mr. LYNN. Thank you, Chairman Bentz, Ranking Member Huffman, and the members of the Subcommittee. I appreciate the opportunity to provide testimony on H.R. 3415 to direct the Secretary of the Interior to convey to the Midvale Irrigation District the Pilot Butte Power Plant. It is my honor and pleasure to address you today.

I am the Manager of the Midvale Irrigation District. We are located in Pavillion, Wyoming. The District was formed in 1921 and is historically known as the Riverton Unit of the Department of the Interior Bureau of Reclamation. Major facilities in this unit are the Bull Lake Dam and Reservoir, Pilot Butte Dam and Reservoir, Wind River Diversion Dam, the Pilot Butte Power Plant, as well as 100 miles of main canals, 300 miles of lateral canals, and approximately 650 miles of structured drains.

Midvale is under contract with the Bureau of Reclamation to operate and maintain these transferred works. The District serves approximately 73,000 acres of irrigable lands with direct flow water from the Wind River and stored water from Bull Lake and Pilot Butte Reservoirs.

The Pilot Butte Reservoir is an off-stream facility fed by the Wyoming Canal, approximately 10 miles downstream of the Wind

River Diversion Dam. The reservoir supplies the Pilot Canal, which extends another 38.2 miles and irrigates the southern portion of the District.

The Pilot Butte Power Plant is located at the drop from Wyoming Canal to Pilot Butte Reservoir. The plant began generating power in 1925, and has two generating units which operate under a maximum head of 105 feet, with a total capacity of 1,600 kilowatts. Power was distributed over 76 miles of transmission lines. The plant was shut down on June 15, 1973 because of high operation and maintenance costs and penstock problems. The penstock was replaced and the units were placed back in service in June 1990, and continued through 2008. Following an economic analysis, the Bureau of Reclamation decided to shut down the power plant due to increasing operation and maintenance costs and needed plant repairs.

The Midvale Irrigation District has been interested in hydropower generation for many years, and applied for a hydropower feasibility study through the Wyoming Water Development Commission. A Level II study, published in June 2016 assessed the feasibility of developing hydropower on several of Midvale's drop structures, and also assessed the feasibility of Midvale rehabilitating and operating the Pilot Butte Power Plant. The recommendations of the report considered most all of the power generation and appurtenant equipment had exceeded its useful life and in need of replacement with modern power generating equipment.

The Pilot Butte Power Plant is referred to by Reclamation as reserved works, meaning the facility and the appurtenant penstock and headgate are to be retained by Reclamation for its use in generating power income. The reserved works designation does not allow the facilities to be transferred by any other means but through an Act of Congress.

As mentioned, the power plant has been shut down and mothballed since 2008, and a future plan for demolition was estimated by Reclamation at approximately $5 million several years ago.

Additionally, Reclamation incurs mounting annual costs for maintenance and inspection of the facility, even as it sits idle.

The Midvale Irrigation District recognizes the mounting costs of the facility to Reclamation, and is petitioning Congress to transfer the reserved works to the District for the opportunity to rehabilitate the building and purchase new equipment to produce hydroelectric power during its irrigation season, which is approximately 6 months of the year.

Ultimately, the produced power would benefit the District's 940 water users, and in keeping with the goal of providing the maximum amount of available water to the District's constituents at the lowest reasonable cost each year.

The property the power plant and appurtenances are located on is managed by the Midvale Irrigation District for Reclamation and is eligible for title transfer through the Dingell Act as transferred works, but the reserved works are not.

In closing, the Midvale Irrigation District is in support of the Pilot Butte Power Plant Conveyance Act, and asks that it be supported by the Subcommittee.

Thank you for the opportunity to testify before you today, and I will gladly answer any questions the Subcommittee may have.

[The prepared statement of Mr. Lynn follows:]

PREPARED STATEMENT OF STEVE J. LYNN, DISTRICT MANAGER, MIDVALE IRRIGATION DISTRICT, PAVILLION, WY

ON H.R. 3415

Chairman Bentz, Ranking Member Huffman, and Members of the Subcommittee, I appreciate the opportunity to provide testimony on H.R. 3415 to direct the Secretary of the Interior to convey to the Midvale Irrigation District the Pilot Butte Power Plant. It is my honor and pleasure to address you today.

My name is Steve J. Lynn, District Manager of the Midvale Irrigation District, located in Pavillion, Wyoming. The District was formed in 1921 and historically known as the Riverton Unit of the Department of the Interior, Bureau of Reclamation. Major facilities of this unit are Bull Lake Dam and Reservoir, Pilot Butte Dam and Reservoir, Wind River Diversion Dam, and Pilot Butte Power Plant as well as 100 miles of main canals, 300 miles of lateral canals and approximately 650 miles of drains. Midvale is under contract with the Bureau of Reclamation to operate and maintain these transferred works.

The District serves approximately 73,000 acres of irrigable lands with direct flow water from the Wind River and stored water from Bull Lake and Pilot Butte Reservoirs.

Pilot Butte Reservoir is an off-stream facility fed by the Wyoming Canal, approximately 10 miles downstream of the Wind River Diversion Dam. The reservoir supplies the Pilot Canal which extends 38.2 miles, and irrigates the southern portion of the District.

The Pilot Butte Power Plant is located at the drop from the Wyoming Canal to Pilot Butte Reservoir. The plant began generating power in 1925 and has two generating units which operate under a maximum head of 105 feet with a total capacity of 1,600 kilowatts. Power was distributed over 76 miles of transmission lines. The plant was shut down on June 15, 1973, because of high operation and maintenance costs and penstock problems. The penstock was replaced, and the units were placed back in service in June 1990 and continued through 2008.

Following an economic analysis, the Bureau of Reclamation decided to shut down the power plant due to increasing operation and maintenance costs and needed plant repairs.

The Midvale Irrigation District has been interested in hydropower generation for many years and applied for a hydropower feasibility study through the Wyoming Water Development Commission. The Level II study published in June 2016 assessed the feasibility of developing hydropower on several of Midvale's drop structures and also assessed the feasibility of Midvale rehabilitating and operating the Pilot Butte Power Plant. The recommendations of the report considered most all of the power generation and appurtenant equipment had exceeded its useful life, and in need of replacement with modern power generation equipment.

The Pilot Butte Power Plant is referred to by Reclamation as "Reserved Works", meaning the facility and the appurtenant penstock and head gate are to be retained by Reclamation for its use in generating power income. The Reserved Works designation does not allow the facilities to be transferred by any other means but through an act of Congress.

As mentioned, the power plant has been shut down and mothballed since 2008 and a future plan for demolition was estimated by Reclamation at approximately $5M several years ago. Additionally, Reclamation incurs mounting annual costs for maintenance and inspections of the facility even as it sits idle.

Midvale Irrigation District recognizes the mounting costs of the facility to Reclamation and is petitioning Congress to transfer the reserved works to the District for the opportunity to rehabilitate the building and purchase the new equipment to produce hydroelectric power during its irrigation season, which is approximately 6 months of the year. Ultimately the produced power would benefit the District's 940 water users in keeping with the goal of providing the maximum amount of available water to the District's constituents at the lowest reasonable cost each year. The property the Power Plant and appurtenances are located on is

managed by the Midvale Irrigation District for Reclamation and is eligible for title transfer through the Dingell Act, as "Transferred Works", but the reserved works are not.

In closing, the Midvale Irrigation District is in support of the "Pilot Butte Power Plant Conveyance Act" and asks that it be supported by the Subcommittee. Thank you for the opportunity to testify before you today and I'll gladly answer any questions the Subcommittee may have.

Mr. BENTZ. Thank you, Mr. Lynn. I now recognize Mr. Leonard for 5 minutes.

STATEMENT OF TOM LEONARD, ALDERMAN, TOWN OF NORTH TOPSAIL BEACH, NORTH CAROLINA

Mr. LEONARD. Chairman Bentz, Ranking Member Huffman, and members of the Subcommittee, thank you for the opportunity to provide testimony today on H.R. 2437.

This legislation will correct a mapping error made by the U.S. Fish and Wildlife Service over 40 years ago when it incorrectly designated the northern end of Topsail Island, now the town of North Topsail Beach, as a Coastal Barrier Resources Act, or CBRA, zone.

North Topsail Beach is one of three small towns located on Topsail Island, a 26-mile-long barrier island between Jacksonville and Wilmington, North Carolina, and adjacent to Marine Corps Base Camp Lejeune. Due to our proximity to Camp Lejeune, many of our residents and visitors have a military connection, including myself, a retired U.S. Marine Corps officer with 30 years of service. Like you, North Topsail Beach plays an important role in a collective Federal, state, and local effort to preserve and maintain barrier islands.

As the primary law that protects barrier islands, CBRA is a law that we hold in the highest regard and with the greatest respect. As effective as CBRA has been collectively for the Federal Government, the taxpayers, and the environment, the application of the law in North Topsail Beach has not been wholly positive or successful. In fact, both North Topsail Beach and the U.S. Fish and Wildlife Service recognize that Topsail Unit L06 is one of the most developed CBRA System units in the United States.

CBRA has been overwhelmingly successful at deterring development. So, the question must be asked: Why did CBRA not deter development in North Topsail Beach?

Development continued in North Topsail Beach after the passage of CBRA because the town already had a full complement of infrastructure in place before the enactment of CBRA in October 1982. Having a full complement of infrastructure is one of two primary criteria the U.S. Fish and Wildlife Service uses to determine if an area is developed and thus not eligible for inclusion in the Coastal Barrier Resources System, the other being the density of development.

The full complement of infrastructure is defined by law as a road with a reinforced road bed, a wastewater disposal system, electric service, and a fresh water supply, all of which must be sufficient to serve each lot or building site in the area. A thorough examination of records and documentation, which is summarized in my written testimony, shows that the north end of Topsail Island had

a full complement of infrastructure that meets the requirements outlined in the Service's own guidance and the law.

Roadways have existed along the entire length of Topsail Island since the 1940s. A 1982 zoning map shows that all lots on the northern end of Topsail Island had direct access to a road with a reinforced roadbed. Jones-Onslow Electric Membership Cooperative has provided electrical service to the island since the 1940s. Maps supplied by Jones-Onslow show that even the most northern reaches of Topsail Island had electrical service by 1980. North Topsail Water and Sewer was established in 1979 to provide water and sewer services to North Topsail. Onslow County began to construct its own water system to service the island in 1980. Records establish that water and sewer utility lines ran to the northernmost reaches of the island by the end of 1981.

Hundreds of structures were built in North Topsail before the enactment of CBRA, and hundreds more were built in the years following due to the substantial infrastructure investments made on the island by both public and private entities. There was so much growth in the area that in 1980 West Onslow Beach, which is now North Topsail Beach, was nominated as a statewide "growth center."

It is clear that Congress did not intend to include areas in CBRA with such significant on-the-ground infrastructure investment by private entities and local governments. We agree with Congress which said that "an area which has a full complement of infrastructure," i.e. some combination of roads, water, sewers, electric lines, et cetera, but not structures, suggests that the area is, as a practical matter, already developed.

Being included in CBRA has no doubt had an impact on our community. Our residents cannot qualify for Federal flood insurance. Our town cannot apply for Federal grants and loans or named storm assistance, and our veterans cannot access federally backed mortgage products, including VA loans.

But H.R. 2437 is about equal treatment under the law and is in no way an attempt to subvert CBRA. This bill will just allow our community to be treated like any other community that was not mapped into CBRA, including the two other towns on Topsail Island.

On behalf of the town of North Topsail Beach, I urge you to support and approve H.R. 2437. Thank you again for this generous opportunity.

[The prepared statement of Mr. Leonard follows:]

PREPARED STATEMENT OF TOM LEONARD, LTCOL, USMC (RET.) ALDERMAN, TOWN OF NORTH TOPSAIL BEACH, NORTH CAROLINA

ON H.R. 2437

Chairman Bentz, Ranking Member Huffman, and Members of the Subcommittee, thank you for the opportunity to provide testimony today on H.R. 2437, a bill to revise the boundaries of Coastal Barrier Resources System (CBRS) Unit L06 in North Topsail Beach, North Carolina. The legislation will correct a mapping error made by the U.S. Fish and Wildlife Service over 40 years ago when it incorrectly designated the northern end of Topsail Island, now the Town of North Topsail Beach, as a Coastal Barrier Resources Act (CBRA) zone.

North Topsail Beach is one of three small towns located on Topsail Island, a 26-mile-long barrier island between Jacksonville and Wilmington, North Carolina, and adjacent to Marine Corps Base Camp Lejeune. With a year-round population of just 1,005, North Topsail Beach is a quiet, rural beach town. Due to our proximity to Camp Lejeune, many of our residents and visitors have a military connection, including myself, a retired United States Marine Corps officer with 30 years of service.

Like you, North Topsail Beach is passionate about protecting coastal barrier islands and their significant resources. We have a great responsibility in the collective federal-state-local effort to preserve and maintain these important natural resources. We will always remain committed to carrying out the purposes and objectives of the CBRA as an active partner with the federal government. As the primary law that protects barrier islands, it is a law that we hold in the highest regard. As the CBRA law rightly states, "coastal barriers contain resources of extraordinary scenic, scientific, recreational, natural, historic, archeological, cultural, and economic importance." The CBRA is a testament to the shared interest that the nation has in protecting coastal barrier islands and their "extraordinary" resources.

As effective as the CBRA has been collectively for the federal government, the taxpayers, and the environment, the application of the law in North Topsail Beach has not been wholly positive or successful. In fact, both North Topsail Beach and the U.S. Fish and Wildlife Service (Service) recognize that CBRS Unit L06 is one of the most developed CBRS units in the United States. The CBRA has been overwhelmingly successful at deterring development, so the question must be asked, "Why did the CBRA not deter development in North Topsail Beach?" Development continued in North Topsail Beach after the passage of the CBRA because the Town already had a "full complement of infrastructure" in place before the enactment of the CBRA in 1982. Having a full complement of infrastructure is one of two primary criteria the Service uses to determine if an area is developed and thus not eligible for inclusion in the CBRS, the other being the density of development. For this reason, the proposed mapping change will not set a new precedent for CBRS mapping changes. North Topsail Beach is a unique situation, and few (if any) other CBRS units have received the same level of analysis and attention as Unit L06.

The legislation does not intend or aim to remove Unit L06 from the CBRS. We understand the purposes of the CBRA and support its overarching goals and objectives. The legislation will remove only approximately 590 acres of the total 5,865 acres from the Unit. The approximately 590 acres that will be removed will only include areas served by a "full complement of infrastructure" before the mapping and designation of CBRS Unit L06 in 1982.

Evidence of a Full Complement of Infrastructure

North Topsail Beach has done extensive research to document development at the north end of Topsail Island before 1982. North Topsail Beach submitted this research, totaling 199 pages, to the Service during a 2009 request for comment on its "Draft Report to Congress: John H. Chafee Coastal Barrier Resources System Digital Mapping Pilot Project." The results of this analysis are summarized herein.

As you know, in 1981, the Department of the Interior (DOI) was directed by the Omnibus Budget Reconciliation Act of 1981 (OBRA, P.L. 97-35) to map undeveloped coastal barriers for Congressional consideration. In response, DOI published a notice of proposed action in the Federal Register on August 16, 1982, titled "Federal Flood Insurance Prohibition for Undeveloped Coastal Barriers; Proposed Identification and Submission of Report to Congress" (Proposed Criteria or 47 FR 35696). The Proposed Criteria provided the definitions and delineation standards of undeveloped coastal barriers that guided DOI mapping efforts and is still used to guide the Service's mapping and CBRS unit review efforts today.

In 1982, Congress designated relatively undeveloped coastal barriers along the Atlantic and Gulf Coasts—later including parts of Puerto Rico, the U.S. Virgin Islands, the Great Lakes, and the Florida Keys during the 1990 reauthorization—as part of the CBRS in order to remove the incentive to develop coastal barriers by limiting federal expenditures and financial assistance to designated CBRS units.

Congress later codified some of the definitions outlined by the Service in the Proposed Criteria in Section 2 of the Coastal Barrier Resources Reauthorization Act of 2000 (CBRRA) to provide additional clarification and guidance on what should be considered an undeveloped coastal barrier. Section 2 of the CBRRA specifies that, at the time of the inclusion of a System unit within the System, a coastal barrier area is considered developed if the density of development is more than one

structure per five acres of land above mean high tide and if there is a full complement of infrastructure in place. A full complement of infrastructure is defined in the law as:

(i) a road, with a reinforced roadbed, to each lot or building site in the area;

(ii) a wastewater disposal system sufficient to serve each lot or building site in the area;

(iii) electric service for each lot or building site in the area; and

(iv) a fresh water supply for each lot or building site in the area.

The corresponding report language (Senate Report 106-252) states:

> "Section 2(1) amends the Coastal Barrier Resources Act by establishing a set of criteria to serve as a guide to the Congress, the U.S. Fish and Wildlife Service, and the public to determine whether a coastal barrier should be considered developed, and therefore excluded from the CBRS. The criteria are based on a rule that was proposed by the Department of the Interior in August 1982, but was never finalized (47 FR 35696). Despite never being finalized, the proposed rule has long served as a guideline for Congress and the Fish and Wildlife Service when they review suggested changes to the CBRS. In accordance with the proposed rule, this section would consider an area developed if it has more than 1-structure per 5-acres, or a full complement of infrastructure—which is defined to include water supply, wastewater disposal, electricity, and paved roads."

The original 1982 mapping and subsequent 1990 additions to the CBRS designated sections of North Topsail Beach as CBRS Unit L06. However, the Service should not have been mapped North Topsail Beach into the CBRS because the area had a full complement of infrastructure in place prior to the mapping and subsequent designation of the Unit on October 18, 1982. According to the criteria described in the CBRRA, Senate Report 106-252, and the following guidance from the Proposed Criteria, the area meets the conditions for having a full complement of infrastructure:

> "All or part of a coastal barrier will be considered developed, even when there is less than one structure per five acres of fastland, if there is a full complement of infrastructure in place. This is consistent with the clear intent of Congress on this point (Congressional Record, July 31, 1981, p. H5793). A full complement of infrastructure requires that there be vehicle access (i.e., improved roads or docks) to each lot or building site plus reasonable availability of a water supply, a wastewater disposal system, and electrical service to each lot or building site. Ability to use on-site wells and/or septic systems on each later building site in a development, when legally authorized and the normal practice in the vicinity, will constitute water supply and sewage infrastructure since they can be drilled and/or installed concurrently with the construction of the structure (House Report 97-158, Vol. 1, June 19, 198, p. 100; and Congressional Record, July 31, 1981, p. H5793.)"

The Service made an important distinction here that cannot be overlooked. The Service stated that a coastal barrier will be considered developed even when there is less than one structure per five acres of fastland if there is a full complement of infrastructure in place and said that these criteria are "consistent with the clear intent of Congress." The reference the Service made to the Congressional Record on July 31, 1981, is critical because, on that day, the U.S. House of Representatives passed by unanimous consent the OBRA conference report, which, as you know, directed DOI to create the maps that would become the CBRS one year later. And on that day, Representative Thomas B. Evans of Delaware—an original author of the aforementioned OBRA language and later the CBRA itself—spoke to the House on the record "to firmly establish the legislative intent of the sponsors of the provision." Included in Representative Evans' remarks is a discussion of what the sponsors consider an undeveloped coastal barrier:

> "Regarding the determination of which coastal barriers are undeveloped, the House adopted, and the Senate agreed to, section 1321(b)(2) which requires that an undeveloped coastal barrier shall be treated as such only if there are few people-made structures on the barrier, or portion of a barrier, so that these structures and human activities on the barrier do not significantly impede geomorphic and ecological processes. In interpreting the first aspect of this standard, the authors intend that the Department use the same standard which they have used in their ongoing inventory of

> coastal barriers. That is, an area which averages less than one structure per 5 acres should be considered undeveloped. We also expect, and this was noted in the report from the Banking Committee, that the Department will take into account the level of infrastructure—roads, water, sewers, electric lines, jetties, and so forth—in place in making this determination. For example, the presence of scattered structures with no associated infrastructure suggests that an area is not developed. On the other hand, an area which has a full complement of infrastructure; that is, some combination of the above-mentioned items, but no structures, should be considered as being already developed" (Congressional Record, July 31, 1981, p. H18935-H18936).

Representative Evans clearly stated that the sponsors intended for coastal barriers with a full complement of infrastructure (some combination of roads, water, sewer, electric lines, jetties, etc.) to be considered developed, *even if there are no structures*. Some areas of North Topsail Beach met both criteria and were not included in CBRS Unit L06. Those pockets are clearly visible on the current maps for the Unit. However, other areas of North Topsail Beach seemingly needed more structures to meet the density of development criteria despite the significant growth occurring on the north end of Topsail Island. Nevertheless, the significant infrastructure on the island, which supported the existing structures and later development, was in place before the passage of the CBRA in 1982.

In 1981–1982, when the Service was mapping coastal barriers per Congress' directive in the OBRA, development status was determined primarily on the density of visible structure as seen from aerial photography. This method is understandable given the immense amount of mapping the Service needed to complete within a short period. According to a July 28, 1982, memo from the Coastal Barrier Task Force to the Secretary of the Interior on the Interim Proposed Undeveloped Coastal Barrier Designation for Topsail Unit L06, the Task Force stated, "Aerial photography taken April 30, 1982, verifies the existence of the components including a linear beach feature, sand dunes, and landward aquatic habitat within the area proposed for designation as an undeveloped coastal barrier. In addition, those aerial photographs confirm the lack of sufficient structure and other facilities or visible impacts to consider the area proposed for designation developed as defined by statute."

However, this aerial examination method did not reveal the significant infrastructure development already on the ground. A thorough examination of records and documentation shows that the north end of Topsail Island had a full complement of infrastructure that meets the requirements outlined in the Proposed Criteria and the CBRRA.

Roads

Roadways have existed along the entire length of Topsail Island since the 1940s. State records indicate a fully paved road in 1953, which became part of the state highway system in 1968. A 1982 Onslow County Zoning Map shows that all lots on the northern end of Topsail Island had direct access to a road with a reinforced roadbed.

In addition, North Topsail Beach is accessible from the mainland by NC Highway 210 and the Larry Walton Memorial Bridge, which was built in 1968. The bridge provides direct and convenient access to North Topsail Beach and is responsible, in part, for the significant growth on Topsail Island in the 1970s and 1980s. Bridge access to the island has also been available through Surf City, the town just to our south, since 1955.

Electricity

Jones-Onslow Electric Membership Corporation (EMC) has provided electrical service to Topsail Island since the 1940s. Easement records show that Jones-Onslow EMC aggressively expanded electrical service throughout Topsail Island in 1977 and 1978. Maps supplied by Jones-Onslow EMC show that even the most northern reaches of Topsail Island had electrical service by 1980. Electrical lines suspended on telephone poles were installed well before 1982 along NC Highway 210 and New River Inlet Road, allowing every lot in the area direct access to power.

Water and Sewer

North Topsail Water and Sewer was established in 1979 to provide water and sewer services to North Topsail. The North Carolina Department of Transportation granted the company easements to extend its utility lines along New River Inlet Road in 1980. A pump station at the center of New River Inlet Road was also operational by 1980. That same year, Onslow County began to construct its own water

system. The County's system gained utility easement rights along Island Drive while North Topsail Water and Sewer still serviced the New River Inlet Road area. In 1981, North Topsail Water and Sewer transferred ownership of its water system to Onslow County. Records establish the location of North Topsail Water and Sewer's utility lines as running from NC Highway 210 to the New River Inlet. Onslow County completed its water pipelines along Island Drive by the end of 1981.

Initial sewer permits were issued in 1979 to service the northern section of Topsail Island. A 53,000-foot extension of sewer lines was installed in 1982, and a pump station was located near the bridge (now the Larry Walton Memorial Bridge). Most significantly, an expanded 33.4-acre treatment facility and a 268-acre irrigation area were constructed at this time, which still supports North Topsail Beach's wastewater needs today.

Groundwater sources for water wells were also readily available to supplement the water supply, and the installation of septic systems was available to lots where sewer lines were not already installed.

As a result of the significant infrastructure investments by private and public entities, there were approximately 490 existing housing units in North Topsail Beach by the end of 1981, and 100 additional units were constructed in 1982. Zoning authority records indicate that 179 more housing units were built in 1983, 232 more in 1984, 250 more in 1985, and so on. There was so much growth in the area in the late 1970s and early 1980s that in 1980, West Onslow Beach (now North Topsail Beach) was nominated as a statewide "growth center" (1980 Onslow County Resolution).

According to 1982 zoning maps, approximately 796 lots were on the main road. As was the case for the existing structures, each lot could connect directly to electrical, sewer, and water services. The adequacy of infrastructure is shown clearly by the fact that the Service excluded from the CBRS two housing developments at the extreme north end of New River Inlet. These developments were made possible because of the existing roadways, electric and water infrastructure, and the ability to install private drives, septic systems, and wells.

In summary, before the passage of the CBRA, the north end of Topsail Island had in place infrastructure consisting of:

1. a road with a reinforced roadbed (NC Highway 210 and New River Inlet Road);
2. a wastewater disposal system sufficient to serve each lot or building site in the area (North Topsail Water and Sewer Corporation, Onslow County, and availability of septic);
3. electric service for each lot or building site in the area (Jones-Onslow EMC); and
4. a fresh water supply for each lot or building site in the area (North Topsail Water and Sewer Corporation, Onslow County, and availability of groundwater sources for wells).

(North Topsail Beach's Infrastructure Analysis totals 199 pages and therefore exceeds the testimony attachment limitations allowed by the Subcommittee. North Topsail Beach can provide the Subcommittee with the Infrastructure Analysis at a later date at the Subcommittee's request.)

We must also address the single highway corridor provision outlined in the Proposed Criteria. While the Service generally identifies vehicle access, water supply, wastewater disposal, and electrical service as the infrastructure necessary for an area to be considered developed, the Service also qualifies that "[t]he presence on a coastal barrier of a single road, or even a through highway, plus associated electric transmission and water and sewer lines in this highway corridor does not constitute the necessary full complement of infrastructure necessary to support development." The terms "through highway" and "highway corridor" suggest a highway with limited direct access from private lots. We must emphasize that NC Highway 210 and New River Inlet Road are the primary local roadways in North Topsail Beach. Due to the island's narrow configuration, the main water, wastewater, and electrical infrastructure lines were placed down these roads, with most lots directly bordering the roads, as you would see on a typical neighborhood street. There was no restricted access to these roads from lots or building sites, as would be the case if NC Highway 210 and State Route 1568/New River Inlet Road were through highways or highway corridors.

In its "Draft Report to Congress: John H. Chafee Coastal Barrier Resources System Digital Mapping Project" (2009), the Service "affirmed that sewer and water lines were installed along the main roads and primary electric service was

available" in North Topsail Beach but said that "secondary services were not constructed until the lots were developed" (p. D-14). There are no references to "secondary services" in the OBRA, CBRA, CBRRA, Proposed Criteria, or related documents. The term seems to reference infrastructure installed from a primary utility line onto a building site. Without a structure, there is no need for "secondary services" to a lot or building site. We again reference Representative Evans' comments: ". . . the presence of scattered structures with no associated infrastructure suggests that an area is not developed. On the other hand, an area which has a full complement of infrastructure; that is, some combination of the above-mentioned items, but no structures, should be considered as being already developed" (Congressional Record, July 31, 1981, p. H18935-H18936). The Service refrained from including any reference to "secondary services" in its final report to Congress (2016).

Further, this same infrastructure provided service to lots in the southern half of North Topsail Beach, which were not included in the CBRS, and two developments in the northern half, which were excluded from the CBRS. In the case of the southern half of the Town, NC Highway 210 was not considered a single road, through highway, or highway corridor, even though the same infrastructure that served the southern half of the Town also served the northern half. We must also note that the other communities on Topsail Island, Surf City and Topsail Beach, were not included in the CBRS.

Federal Flood Insurance and Other Impacts

In removing certain areas of North Topsail Beach from the CBRS, H.R. 2437 will allow the Town and its residents to qualify for federal financial assistance, just like any other community not in the CBRS.

For example, H.R. 2437 will enable property owners to obtain federal flood insurance. These structures are currently covered by private flood insurance, which is generally only provided at full risk rates. If the legislation is approved, these homeowners can remain on their current private plans or move to the NFIP. If a homeowner switches to the NFIP, that property would not be eligible for any special status (i.e., grandfathering) and would therefore be expected to pay full risk rates.

Although several hundred housing units within CBRS Unit L06 were built between 1982 (the year CBRA was authorized) and when the 1987 flood standard went into effect, most structures built in this area are post-FIRM and therefore built to at least the 1987 flood standard. Due to Town ordinances, property owners within CBRS Unit L06 must meet the same flood policy dwelling standards adhered to by the non-CBRS residents, who must meet NFIP standards. In addition, due to the Town's successful floodplain management policies and Community Rating System standing, eligible properties in North Topsail Beach receive substantial premium discounts through the NFIP.

Regarding previous CBRA legislation, it is our understanding that the Congressional Budget Office (CBO) historically has not provided estimated costs to the federal government regarding future flood events, stating that there is no basis for predicting such events and thus no basis for providing an estimated cost to the federal government. However, some suggest that taking areas out of the CBRS puts the federal government at risk.

North Topsail Beach completed an analysis of flood insurance claims filed from 1987, the year North Topsail Beach began participating in the NFIP, through 2015. This analysis shows that North Topsail Beach is a donor community, meaning it contributes more to the NFIP than it receives (refer to the tables below). Between 1987 and 2015, average yearly NFIP claims in North Topsail Beach totaled $524,235, while annual NFIP premiums totaled $1,725,329. (Approximately 56 percent of policies are for pre-FIRM structures and 44 percent are for post-FIRM structures.) Based on this analysis, North Topsail Beach property owners pay 329 percent more in annual NFIP premiums than they claim. Therefore, it can be assumed that North Topsail Beach will not only continue to be a donor community to the NFIP but will also likely contribute more to the NFIP (in terms of both percentages and annual surplus contributions) because a greater share of structures will be post-FIRM.

The CBRS designation has also prohibited property owners and homebuyers from access to federally backed mortgage products. This is especially challenging given North Topsail Beach's proximity to Camp Lejeune, one of the largest military installations in the nation. Many of our residents currently serve in the military or are military veterans, and due to the Town's CBRS designation, these residents cannot access V.A. loans.

Of course, the CBRS designation has prevented the Town itself from applying for federal financial assistance, including FEMA Public Assistance after storm events, and most other federal grants, loans, and technical support.

Conclusion

H.R. 2437 will only remove from the CBRS areas of North Topsail Beach that were served by a full complement of infrastructure before the mapping and designation of CBRS Unit L06 in 1982. As is clear from our review of the law, the Proposed Criteria, House and Senate Reports, and the Congressional Record, coastal barrier areas served by a full complement of infrastructure must be deemed developed and thus not designated as part of the CBRS. It is clear that Congress did not intend to include areas in the CBRS with such significant on-the-ground infrastructure investment by local governments and private entities. As a practical matter, undeveloped areas do not have such substantial public and private infrastructure investment, particularly areas where there is a clear intention that the infrastructure is meant to support residential structures. Undeveloped areas do not have sewer lines, water lines, wastewater treatment facilities, electricity, and paved roads that serve no purpose. We agree with Congress that ". . . an area which has a full complement of infrastructure (i.e., some combination of roads, waters, sewers, electrical lines, etc.) but not structures, suggests that the area is, as a practical matter, already developed" (House Report 97-158, Volume 1, page 100).

We want to express to you our serious commitment to preserving the CBRA. We do not take this request lightly, and we know how important it is to you that we all continue to protect and further the integrity and goals of the CBRA. In the spirit of the CBRA, the Town has placed 60 percent of its total land acreage in conservation zoning and restricted development to 30 percent of residentially zoned properties. In accordance with the Town's adopted Land Use Plan, conservation zones can never be rezoned for development, protecting this land from future development incursions. H.R. 2437 is about equal treatment under the law and is in no way an attempt to subvert the CBRA. We fully understand the importance of preserving the integrity of barrier islands. A barrier island is our home, and preserving our home is our highest priority.

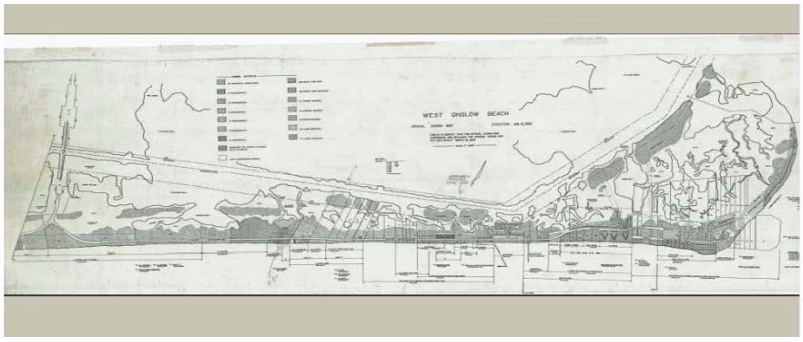
On behalf of the Town of North Topsail Beach, I urge you to support and approve H.R. 2437.

Thank you for your time and attention.

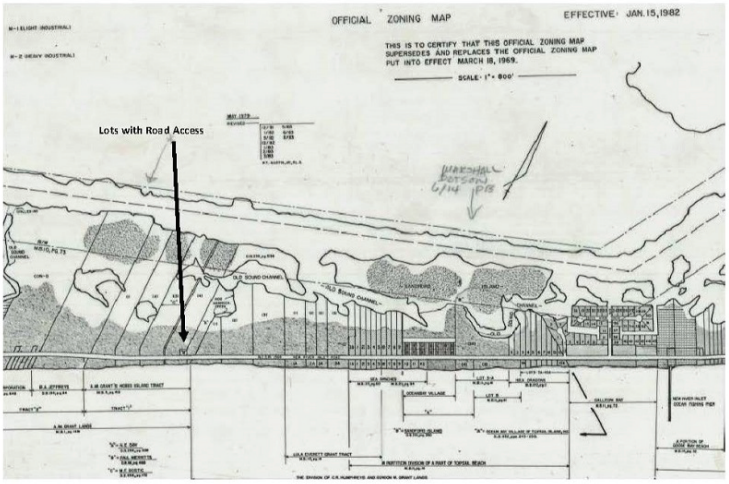
*****

ATTACHMENTS

North Topsail Beach: 1982 Onslow County Zoning Maps—Documenting Lots' Road Access Prior to 1982



North Topsail Beach: 1982 Onslow County Zoning Maps—Detailed Excerpt



Onslow County Letter Confirming Development in North Topsail Beach Before CBRA Enactment

1734

COUNTY OF ONSLOW

June 12, 2014

Mr. Stuart Turille, Town Manager
North Topsail Beach
2008 Loggerhead Court
North Topsail Beach, North Carolina 28460

RE: North Topsail Beach Construction Activity

Dear Mr. Turille:

Onslow County was the primary authority responsible for issuing development permits in the area formerly known as West Onslow Beach, now the Town of North Topsail Beach, leading up to and including the year 1982. This includes both the NC Hwy 210 and New River Inlet Road (SR-1568) corridors. Based upon historical records, the County approved approximately 590 structures in this area prior to January 1, 1982. Direct access to water and sewer was required at the time the permits were approved.

Specifically, prior to the U.S. Fish and Wildlife's Service's 1982 mapping, each lot or building site included in the CBRS unit L06 had direct access to water and sewer. The systems providing these services were constructed prior to 1982 and anyone requiring service could, on demand, be connected.

If you have further questions, please do not hesitate to contact our office.

Sincerely

Jeffrey L. Hudson
County Manager

CC: Mr. Benjamin Warren, Planning and Development Director

Jones-Onslow Electric Membership Corporation Letter Confirming Electrical Service in North Topsail Beach Before CBRA Enactment

Jones-Onslow
259 Western Boulevard • Jacksonville, North Carolina 28546-5736
www.joemc.com • 910-353-1940 • 800-682-1515
Electric Membership Corporation

June 16, 2014

Stuart Turille
Town Manager
Town of North Topsail Beach
2008 Loggerhead Court
North Topsail Beach, NC 28460

Dear Mr. Turille,

Jones-Onslow Electric Membership Corporation provides electric distribution services to the Town of North Topsail Beach.

Electrical distribution services have been available to this area, after World War II, when the Department of the Navy sold the existing electrical system to Jones-Onslow EMC. The citizens of the island north end had "direct access" to electrical service if they so choose from the end of World War II to current day.

Electrical distribution services were available to each lot or building site, included in the CBRS unit L06, prior to the 1982 mapping by U S Fish and Wildlife Service. The main distribution system was in place prior to the 1982 date and electrical services, including metering, were provided upon construction on lots and sites.

Jones Onslow will provide additional information as needed.

Sincerely,

J. Ronald McElheney
Chief Executive Officer

Pluris Letter Confirming Wastewater Service in North Topsail Beach Before CBRA Enactment

PLURIS

June 16, 2014

Stuart Turille
Town Manager
Town of North Topsail Beach
2008 Loggerhead Court
North Topsail Beach, NC 28460

Re: Coastal Barrier Resources Act ("CBRA")

Dear Mr. Turille,

Pluris, LLC ("Pluris") is providing this correspondence in accordance with your request of June 12, 2014. As the Town is aware, Pluris manages the sewer infrastructure in the CBRA, Unit LO6. Pluris staff has researched its historical records and can confirm that prior to the U.S. Fish and Wildlife Service's 1982 mapping of each lot or building site included in the CBRA, Unit LO6; that all lots had direct access to sewer services since the beginning of the utility in the year, 1979.

Regarding the process for service; upon notification of residential and/or commercial construction, and after fees are paid, access to sewer is then permitted and service lines to the new residential and/or commercial structure completed.

Pluris staff are prepared to provide an affidavit and or testify to the aforementioned should the Town need additional assistance on the matter.

If you have any questions, please feel free to contact me directly, at any time at (910) 327-2880.

Sincerely

Randy Hoffer

Regional Manager

Onslow Water and Sewer Authority Letter Confirming Water Service in North Topsail Beach Before CBRA Enactment

Member Governments
Holly Ridge
Jacksonville
North Topsail Beach
Onslow County
Richlands
Swansboro

ONWASA
Onslow Water & Sewer Authority

Administrative Division
Billy Joe Farmer
Executive Director
bfarmer@onwasa.com

910.937.7532 Tel
910.347.0793 Fax

June 11, 2014

Stuart Turille
Town Manager
Town of North Topsail Beach
2008 Loggerhead Court
North Topsail Beach, North Carolina 28460

Dear Town Manager Turille,

The Onslow Water and Sewer Authority, ONWASA, Public Water System ID #NC0467035, provides potable drinking water to the Town of North Topsail Beach meeting all NCDENR & EPA standards for safe drinking.

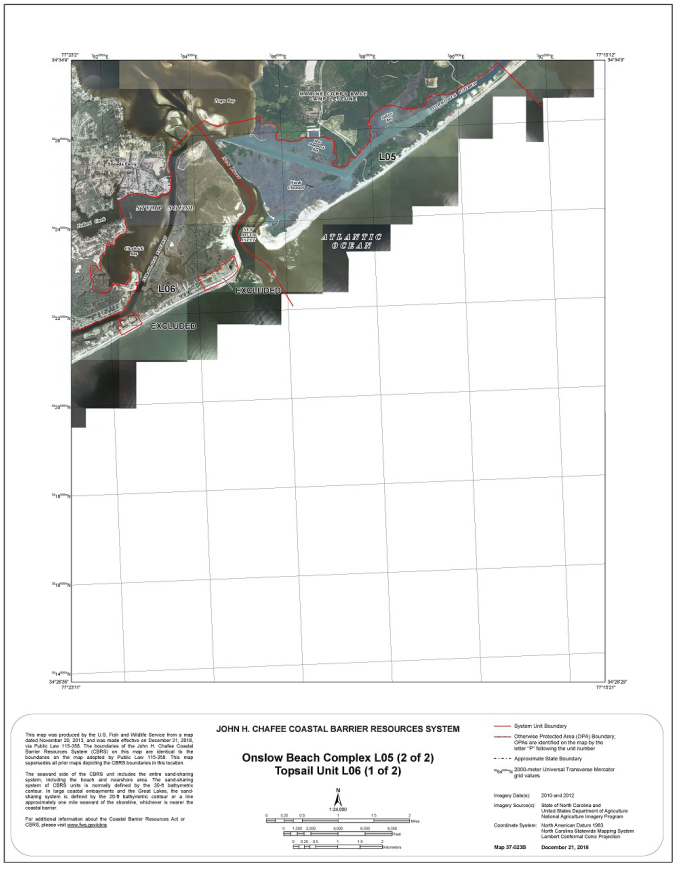
Prior to the U.S. Fish and Wildlife's Service's 1982 mapping, each lot or building site included in the CBRS unit L06 had direct access to water services since the water system's construction prior to 1982. The normal building process is that, upon notification of construction, access into the line is permitted and meters and service lines to the new structure are then allowed.

I will provide any additional information if needed.

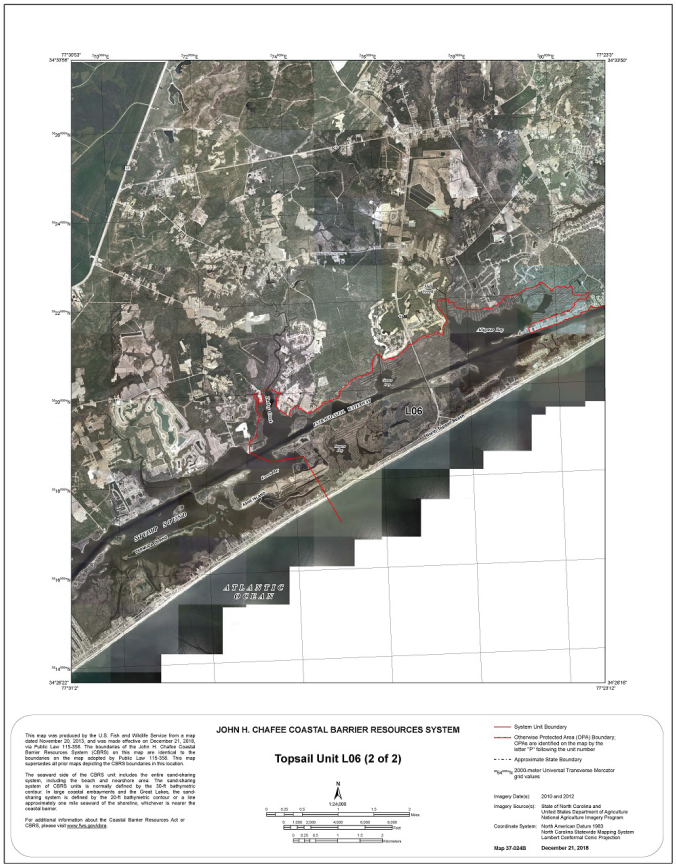
Sincerely,

Billy Farmer
Executive Director

Current Map for Unit L06 (1 of 2): Onslow Beach Complex L05 (2 of 2)
Topsail Unit L06 (1 of 2)



Current Map for Unit L06 (2 of 2): Topsail Unit L06 (2 of 2)



This map was produced by the U.S. Fish and Wildlife Service from a map dated November 20, 2013, and was made effective on December 21, 2018, via Public Law 115-358. The boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) on this map are identical to the boundaries on the map adopted by Public Law 115-358. This map supersedes all prior maps depicting the CBRS boundaries in this location.

The seaward side of the CBRS unit includes the entire sand-sharing system, including the beach and nearshore area. The sand-sharing system of CBRS units is normally defined by the 30-ft bathymetric contour in large coastal embayments and the Great Lakes, the sand-sharing system may extend as far as the 60-ft bathymetric contour or approximately one mile seaward of the shoreline, whichever is nearer the coastal barrier.

For additional information about the Coastal Barrier Resources Act or CBRS, please visit www.fws.gov/cbra.

JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM

Topsail Unit L06 (2 of 2)

1 Inch = 0.5 Miles

System Unit Boundary
Otherwise Protected Area (OPA) Boundary; OPAs are identified on the map by the letter "P" following the unit number
Approximate State Boundary
2000-meter Universal Transverse Mercator grid values

Imagery Date(s): 2010 and 2012
Imagery Source(s): State of North Carolina and United States Department of Agriculture National Agriculture Imagery Program
Coordinate System: North American Datum 1983 North Carolina Statewide Mapping System Lambert Conformal Conic Projection

Map 37-024B December 21, 2018

Map of Approximate Areas Removed from CBRS Unit L06 Under H.R. 2437

Mr. BENTZ. Thank you, Mr. Leonard. I now recognize Mr. Stiles for 5 minutes.

STATEMENT OF WILLIAM "SKIP" A. STILES, JR., SENIOR ADVISOR, WETLANDS WATCH, NORFOLK, VIRGINIA

Mr. STILES. Chairman Bentz, Ranking Member Huffman, members of the Subcommittee, Vice Chair Kiggans, my name is William Stiles. I am Senior Advisor to Wetlands Watch, and for 16 years before that I was Executive Director.

Wetlands Watch is a statewide environmental organization in Virginia working on the conservation and protection of wetlands. As such, we use a number of state and Federal programs to protect the wetlands. And CBRA, the Coastal Barrier Resources Act, serves in that role. Its nearly 164,000 acres in Virginia is a significant help to the efforts to protect wetlands in Virginia. That is why we are pleased to see the introduction of H.R. 5490 to expand the System and add over 96,000 acres to Virginia's part of the System. We also welcome the chance to open a conversation about some additional improvements needed to the System.

As has been mentioned numerous times, CBRA is a long-time bipartisan success story with lots of support, and I will not detail that part of it here. I will say that we have two wishes in the consideration of this bill.

First, Congress should add the more than 292,000 acres to CBRA that have been mapped by the Fish and Wildlife and that are contained in the BEACH Act. Adding these areas along the Atlantic and Gulf Coasts will expand the benefits of CBRA, which, again, have been detailed here: the billions of dollars in flood loss avoided, the billions of dollars that are provided in habitat to commercial fisheries.

The second part of this, Congress should plan for tomorrow's challenges today by drawing on innovative state programs and implement the Federal Coastal Hazards Pilot Project to look at future conditions and how the CBRA System needs to adapt to them. It is imperative that on the Federal level we plan for the challenges that sea level rise will bring, and amplify actions being taken by the state.

Virginia's program is a result of acknowledging the changes taking place and acting on the serious risk that the state faces. Virginia has, over the last century, had the highest rate of relative sea level rise on the East Coast, three to four times the global average. In response, a number of Virginia State agencies have taken action. Our Virginia Department of Transportation has new engineering standards for bridges; localities have adopted sea level rise in their planning documents; we have new standards for siting of state buildings; and even the Department of Defense, in its joint land use work around military facilities, is using sea level rise in those planning scenarios.

Virginia has also enacted first-in-the-nation changes to its shoreline regulatory statutes that require permitting agencies to consider sea level rise in issuing development and land-disturbing permits. The goal of these changes is to identify and protect areas into which the wetlands will migrate as sea level rises.

As the intertidal zone rises, it wants to move up shore, and it will move onshore unless there are barriers in the way. In that case, if there are barriers, the coastal ecosystem will drown in place, causing tremendous loss to the acreage that is there.

So, Virginia's statutory changes to our shoreline regulatory programs don't just support the fisheries and habitat, they also recognize the value of keeping development away from harm, echoing the dual goals of CBRA: minimizing development along the shore to reduce coastal residents' exposure to risk, while maintaining escape routes for the habitat.

Other states are acting, as well. Maryland is mapping wetlands migration corridors to better target its conservation easement programs and land purchase programs. So, the timing is perfect for Congress to direct the Fish and Wildlife Service and other Federal and state agencies to conduct a pilot project to explore how CBRA would be extended upland to provide habitat and protect communities. States are working hard to plan for the future, and the CBRA pilot project would help support and inform that work.

When Wetlands Watch began 16 years ago working on sea level rise, our goal was to keep the houses away from the wetlands. We wanted to avoid the development's impact on the wetlands, but we also wanted to allow escape zones for the wetlands. And we also recognized that the wetlands and the shoreline ecosystem are the leading edge of the oceans, and there is great risk when you build too close to the ocean. Sixteen years later, we are finding that coastal residents want the wetlands away from their houses because the wetlands are slowly inching onto their property, bringing greater risk. So, we have agreement that the wetlands and the houses should be separated. All that is lacking is a strategy to do that, and that is what we hope that the pilot project would do.

So, in conclusion, we very much support the addition of the acreage that is proposed in this bill, and we would also like the inclusion of the pilot program. Thank you for your consideration.

[The prepared statement of Mr. Stiles follows:]

PREPARED STATEMENT OF WILLIAM A. STILES, JR., SENIOR ADVISOR/FORMER EXECUTIVE DIRECTOR, WETLANDS WATCH

ON H.R. 4590 AND H.R. 2437

Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to speak to you today regarding the Coastal Barrier Resources Act (CBRA).

I am William A. Stiles, Jr. and for the last sixteen years, I was executive director of Wetlands Watch, a Norfolk, Virginia-based statewide nonprofit that has been working on the conservation and protection of wetlands since 2000. We have depended upon a number of state and federal protections for coastal ecosystems, including CBRA. At present, there are nearly 164,000 acres in the Coastal Barrier Resources System (System) in Virginia, with nearly 155,000 acres in aquatic habitat and over 8,700 acres of that in uplands. This acreage represents a significant portion of our coastal resources. The CBRA is important for Virginia and the nation, and there are opportunities to expand its benefits that Congress should act upon.

The Coastal Barrier Resources Act is a bipartisan success story supported by taxpayer advocates, conservative think tanks, environmental groups, state officials, sportsmen's organizations, insurance industry groups, and Democrats and Republicans alike. CBRA is unique among federal programs. It has three goals: save federal tax dollars, conserve undeveloped coastal habitat, and promote public safety. To save federal tax dollars, CBRA prohibits most federal expenditures in areas included in the Coastal Barrier Resources System (System.) Development can still occur, but without the financial backing of the federal taxpayer. The CBRA System includes undeveloped areas, such as barrier islands and beaches, spits, inlets, wetlands, and estuarine areas. Roughly 3.5 million acres are in the System along the Atlantic Ocean, Gulf of Mexico, Great Lakes, U.S. Virgin Islands, and Puerto Rico.

CBRA has a long track record of bipartisan support. The original Act's author, Rep. Thomas B. Evans (R-DE), said CBRA was needed because "the U.S. taxpayer should not subsidize and bear the risk for private development on coastal barriers." As he signed the bill into law in 1982, President Ronald Reagan noted that CBRA "simply adopts the sensible approach that risk associated with new private development in these sensitive areas should be borne by the private sector, not underwritten by the American taxpayer." Rep. Gerry Studds (D-MA) introduced the Coastal Barrier Improvement Act of 1990, which expanded the CBRA System and was signed into law by Pres. George Bush. In 2000, legislation reauthorizing and strengthening CBRA was championed by Sen. John Chafee (R-RI) and signed into law by Pres. Bill Clinton, who applauded CBRA, saying that it, "discourages development, keeping lives out of harm's way, protecting fish and wildlife habitat, and reducing wasteful expenditures of taxpayer dollars." In 2005, Sen. James Inhofe (R-IN) described CBRA as "a free-market approach to conservation. These areas can be developed, but Federal taxpayers do not underwrite the investments." And in 2018, Reps. Lisa Blunt Rochester (D-DE) and Thomas J. Rooney (R-FL) introduced the "Strengthening Coastal Communities Act of 2018," which added 18,000+ acres to CBRA and was signed into law by Pres. Donald Trump.

By all measures, CBRA has been a phenomenal success. By removing the dozens of federal programs that subsidize coastal development, CBRA has saved the Federal Treasury nearly $10 billion in avoided expenditures and is on track to save billions more. CBRA has helped steer people away from areas prone to deadly hurricanes, rising seas, and growing climate change impacts, with 85% of CBRA areas remaining undeveloped or lightly developed. And CBRA has helped conserve habitat that is vitally important to wildlife and the nation's commercial and recreational fishing industries. I would like to focus my discussion on the benefits of the CBRA and the need to expand and strengthen it through new legislation. My testimony will focus on:

- **Planning for tomorrow's challenges today: Drawing on innovative state programs to implement a federal Coastal Hazards Pilot Project**. In order to protect areas that will be crucially important for tomorrow's economies, environment, and public safety, Congress should authorize a Coastal Hazards Pilot Project, informed by on-the-ground state programs, to start

identifying coastal hazard areas and areas where habitat can migrate as sea levels rise and front-line coastal defenses are lost.

- **Protecting today's vulnerable coastal areas: Enacting the "Hurricane Sandy maps" and associated maps**. Congress should enact maps that would add 292,000+ acres to the CBRA in order to save the taxpayer billions of dollars, conserve important habitat, and ensure flood protections for today's coastal communities.
- **Accurately reflecting coastal conditions: Updating the CBRA's definitions**. CBRA's definition of a "coastal barrier" needs to be updated to include bluffs and other land areas that help buffer upland communities from the impacts of storms, erosion, flooding and rising seas.

1. Planning for tomorrow's challenges today: Drawing on innovative state programs to implement a federal Coastal Hazards Pilot Project.

It is imperative that on the federal level, we plan for the challenges that sea level rise will bring just as states are already doing, including in Virginia. Virginia has modified its shoreline protection laws as the first step in implementing a program to protect coastal areas at risk from sea level rise, along with adjacent upland areas, so that coastal habitat like wetlands can "migrate" into them in response to rising seas. These hazard-prone shoreline areas have restrictions in place to protect state waters, and conditions on development. This pragmatic, forward-looking approach will help coastal communities plan for the future, and protect areas that can support important habitat. The CBRA, with its emphasis on reducing hazard-prone development and conserving habitat, provides the perfect federal mechanism for a similar approach.

This week, Senators Tom Carper (D-DE) and Lindsay Graham (R-SC) reintroduced their bipartisan "Strengthening Coastal Communities Act," which amends the CBRA to authorize a two-year pilot project. The Act directs the Fish and Wildlife Service, in cooperation with the Army Corps of Engineers, National Oceanic and Atmospheric Administration (NOAA), Federal Emergency Management Agency and state governors, to develop criteria for mapping coastal hazard areas and areas to which habitat can migrate as sea level rises. The result of the project would be reported to Congress, and it would be up to Congress to act upon it. This Coastal Hazards Pilot Project should be included in any CBRA legislation considered by the House.

The CBRA Coastal Hazards Pilot Project in the Senate legislation reflects the same forward-looking pragmatism as Virginia's program. Facing the reality of high sea level rise projections, Virginia made major modifications to our tidal wetlands and shoreline protection programs. These actions may provide a model for how the CBRA System might try to adapt to sea level rise and merit examination under a pilot program.

The Virginia Program: Acknowledging and Acting on Risks.

Virginia's program is the result of acknowledging and taking action upon serious risks that the state faces. Virginia has experienced the highest rate of relative sea level rise on the Atlantic Coast over the last century, rates of relative sea level rise 3 to 4 times the global average. We are already seeing the impacts from these higher tidal waters on our coastal resources and in our shoreline communities. Virginia will continue to experience even higher rates of relative sea level rise over the rest of this century, having been identified by NOAA as a sea level rise "hotspot."

This has prompted many of Virginia's state and local government agencies to use higher rates of relative sea level rise, specifically the NOAA intermediate high projections, in their planning and operations. These projections indicate coastal Virginia will see an additional 1.5 feet of relative sea level rise above current mean higher high water (MHHW) by 2045, 3 feet by 2075, and 4.5 feet 2100.

By executive order in 2019, Virginia set the NOAA intermediate high projections as state planning guidance, which the Virginia Department of Transportation used in its 2020 engineering standards for bridge construction. As well, local governments adopted this guidance in sea level rise plans, such as the City of Virginia Beach's 2020 "Sea Level Wise" plan. The regional planning entity in Southeast Virginia, the Hampton Roads Planning District, adopted this standard in 2018 in its "Sea Level Rise Planning Policy and Approach" guidance for the 17 member localities to use in their planning. The Department of Defense, in its Joint Land Use Studies in Norfolk/Virginia Beach/Portsmouth are using a similar rate, developed by the DoD Coastal Assessment Regional Scenario Working Group (CARSWG) in this work to ensure operational readiness for military facilities.

With these rates of relative sea level rise, areas within the Coastal Barrier Resources System (and the storm damage reduction they provide) will be severely adversely affected in just a few decades unless changes are made to CBRA. These needed changes are what the proposed Coastal Hazards Pilot Project would explore.

In Virginia, the 155,000 acres in the CBRA System that are aquatic habitat will experience major impacts as shallow water aquatic habitat converts to deeper water habitat, adversely affecting submerged aquatic vegetation. Vegetated tidal wetlands will have to transgress landward or drown in place. Barrier islands will migrate landward. Unless we can adapt the System to these changes, more residences and structures will be exposed to storm risk, resulting in higher disaster payments, and vitally important habitat will be lost.

Impacts of Sea Level Rise on Wetlands within the System and Wetlands Watch's Adaptation Efforts

In the mid-Atlantic region, vegetated tidal wetlands adapt to sea level rise in two ways: they can accrete vertically or move horizontally. With modest sea level rise, these wetlands can accrete vertically, capturing sediment and growing on top of prior year's vegetation. In the Chesapeake Bay region, this rate of vertical accretion is about two feet per century. However, Virginia's current rate of relative sea level rise on the Atlantic Coast is in excess of the ability of vegetated tidal wetlands to accrete vertically . With the rates of relative sea level rise being experienced in Virginia, the only option for the intertidal ecosystem is to "move uphill" or transgress landward with the rising intertidal zone. If, however, there are hardened structures in the way—like buildings and seawalls—the wetlands cannot colonize the new/higher intertidal zone and will drown in place.

In 2007, Wetlands Watch determined that with the rate of relative sea level rise we were experiencing then (+2.5 feet by 2100), we would lose between 50 and 80 percent of our vegetated tidal wetlands. If Virginia could keep the land uphill/landward from the wetlands free of development, allowing the coastal ecosystem to migrate or transgress landward as tidal waters rose, we would reduce that loss. However, if we allowed the land behind the wetlands to become developed, blocking the wetlands from migrating and causing them to drown in place, we would experience higher wetlands losses.

Facing this threat, in 2007 Wetlands Watch switched its focus from conventional wetlands protection and focused on sea level rise adaptation, becoming one of the first organizations in the country to undertake this work. Wetlands Watch developed partnerships at the local government level to help inform land use and natural resources decisions by county and city staff and leadership in order to minimize shoreline development and lessen future wetlands losses.

Working at the local level, Wetlands Watch saw that sea level rise adaptation was not just about the wetlands: coastal residents were at increasing flood risk from rising sea level as well. In coastal Virginia, we were seeing flood and storm damages increase and "sunny day" flooding disrupting communities. In Norfolk, Virginia, our schools started having "flood days" causing school delays and cancellation. Threats to our shoreline economy, outlays for disaster payments, and a range of other community impacts needed to be addressed as well. Shoreline adaptation was not just about the ecosystem but had to include increasingly at-risk coastal communities

The approach Wetlands Watch has taken to address Virginia's sea level rise risk is similar to the one taken under CBRA. We have, from the beginning, seen habitat protection and community risk reduction as twin goals of our work. We realized that minimizing development along the tidal shoreline would both reduce coastal residents' exposure to risk while maintaining "escape routes" for the intertidal habitat. This is very similar to the approach that CBRA takes in reducing incentives for development that harm habitat and place people at risk.

Virginia Is Taking Action

Virginia provides regulatory protection to the coastal ecosystem with the Virginia Tidal Wetlands Act (Code of Virginia § 62.1-44.15:20) which runs in parallel with the protections under the Federal Clean Water Act (33 USC § 1344). Virginia also regulates development and disturbances in the zone adjacent to and landward of the tidal wetlands under the Chesapeake Bay Preservation Act (CBPA) (Code of Virginia § 62.1-44.15:67) in order to protect water quality. Together these two statutes regulate disturbances and development in the zone from low tide to one hundred feet uphill from tidal wetlands.

In 2020, with the guidance of then-Secretary of Natural and Historic Resources, Matthew Strickler, Virginia's General Assembly added sea level rise to both of these regulatory programs, with a goal of ensuring the adaptation of Virginia's tidal and shoreline ecosystem. Both the Tidal Wetlands Law and the CBPA were changed to

require permit decisions to include the NOAA intermediate high projections for relative sea level rise. As far as I can tell, Virginia is the first state in the country to put future conditions as a condition of permit approval under a shoreline regulatory program.

With these changes, both the intertidal and the shoreline buffer permits include future projections of sea level rise, requiring permits to anticipate those future higher water levels and adapt to them. The hope is that as the sea levels rise, development on the land behind the intertidal zone will have conditions placed that will keep it free of barriers to migration, allowing the tidal ecosystem to move "uphill" and escape higher tidal waters.

In addition, the General Assembly has put sea level rise into Virginia's on-site septic regulations, a response to the failure of septic systems along the coastal shoreline. Shoreline development is facing the consequences of our high rates of sea level rise as these septic systems become inundated, fail, and begin releasing sewage into coastal waters, often fouling shellfish aquaculture operations. New siting regulations being developed will place additional conditions on siting these systems, including greater setbacks from the coastal shoreline for new development. These measures would reinforce Virginia's efforts to begin stepping back from the tidal shoreline.

With these actions, Virginia is anticipating future sea level rise in both environmental protection and development decisions along its tidal shoreline. These policy actions to address the impacts of rising sea levels could inform a pilot program to address sea level rise within the Coastal Barrier Resources System.

Other states are responding as well. Maryland has a program to identify "Sea Level Rise Wetland Adaptation Areas" to better target land acquisition and conservation easement programs to create escape routes for the coastal ecosystem. In many coastal states, actions are being taken that would both benefit from and help inform the Coastal Hazards Pilot Project proposed by the Senate legislation.

We are strong supporters of the Coastal Barrier Resource System and see it as a long-standing bipartisan effort to protect coastal communities, preserve intertidal and shoreline natural resources, and limit federal taxpayer exposure to increasingly intense storm damage. It is imperative that the CBRS be strengthened to help address challenges that Virginia and other states are already working to address by authorizing the Coastal Hazards Pilot Project.

2. Protecting today's vulnerable coastal areas: The benefits from expanding the CBRA by enacting the Hurricane Sandy maps and other CBRS maps.

Rising seas and climate change exacerbate hurricane damage, contributing to deadly and enormously costly storms. Last year's Hurricane Ian claimed more than 150 lives and caused over $112 billion in damage, making it the costliest hurricane in Florida's history and the third-costliest in United States history. Coastal habitat, which supports wildlife and America's commercial and recreational fishing industries, is disappearing. More than 80,000 acres of coastal wetlands are being lost on average each year, with sea level rise expected to accelerate that rate.

Expanding the CBRA to include 277,000+ acres identified by the Fish and Wildlife Service in the Hurricane Sandy impacted states, plus more than 15,000 acres in the South Atlantic and Gulf of Mexico also identified by the Service, would lead to significant economic, public safety, and environmental benefits, such as those discussed below.

CBRA saves billions of federal tax dollars, with the capacity to save billions more.

CBRA prohibits most federal expenditures in areas included in the CBRA System, including federal flood insurance, grants to build highways, bridges and roads from the Department of Transportation, and similar expenses. Just a few examples illustrate how CBRA is a plus for the U.S. taxpayer and why expanding it makes good economic sense. CBRA:

- *Reduces National Flood Insurance Program claims*. A 2023 study found that areas along the Gulf of Mexico and Atlantic included in CBRA saved $112 million per year in reduced National Flood Insurance Program claims, a 7% savings in annual NFIP claims.
- *Generates multi-billion-dollar savings overall*. A 2019 economic study found that CBRA has saved the federal taxpayer roughly $9.5 billion and is projected to save $11–$108 billion over the next 50 years in shore areas included in CBRA. Extending CBRA upland would save billions more in avoided federal expenditures like disaster relief payments and federal flood insurance.

CBRA supports important economies.

Protecting undeveloped coastal areas from the dozens of federal programs that fund coastal development and redevelopment is vital for multi-billion-dollar economies that depend on healthy coastal ecosystems. CBRA-protected areas are the backbone of many important coastal economies. CBRA:

- *Increases property values*. A 2023 study found that CBRA designation increases property values in adjacent areas, thereby increasing the overall property tax base.
- *Supports a healthy fishing industry*. Fish and shellfish depend on healthy wetlands and estuaries, but according to the National Oceanic and Atmospheric Administration (NOAA), coastal wetland degradation and loss has reduced the size and diversity of fish populations, affecting the sustainability of commercial and recreational fisheries. In 2019, these fisheries supported 1.8 million jobs and contributed $255 billion to the economy in sales.

Undeveloped areas included in CBRA help protect communities from deadly and costly storm damages.

The undeveloped islands, beaches, spits, inlets, and wetland areas included in the CBRS provide important public safety benefits:

- *Reduce flood damage*. Wetlands act as natural sponges, absorbing and temporarily storing floodwaters. By holding back and slowing some of the floodwaters, wetlands can reduce the severity of flooding and erosion, protecting people, property, infrastructure, and agriculture from devastating flood damages. An acre of wetlands can store 1.5 million gallons of floodwater. This protection saves vulnerable coastal communities $23 billion each year.
- *Shield communities from storm and hurricane impacts*. A study funded by the insurance giant Lloyds of London found that coastal wetlands prevented more than $625 million in property damages during the 2012 Hurricane Sandy, reducing property damages throughout the Northeastern United States by 10% on average.

CBRA areas provide vitally important habitat.

CBRA-protected areas are some of the last remaining undeveloped habitat for birds, sea mammals, sea turtles and a host of other species. As development paves over and drains habitat, CBRA areas are a lifeblood for wildlife, providing benefits such as:

- *Sheltering and feeding birds*. About one-half of North American bird species nest or feed in wetlands, with two of North America's migratory bird flyways passing over the Pacific and Atlantic coasts, where coastal wetlands provide habitat to waterfowl and shorebirds. It is estimated that birdwatching in the United States has an economic benefit of $41 billion.
- *Supporting threatened and endangered species*. Nearly half of federally threatened and endangered species need wetlands for their survival.

Congress should enact the Hurricane Sandy maps of eligible areas along New England and the Mid-Atlantic.

The 2012 Hurricane Sandy claimed lives and caused billions of dollars-worth of damage in many parts of the U.S. coast, including nine states in New England and the Mid-Atlantic: New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland and Virginia. The USFWS used supplemental Hurricane Sandy funding to evaluate the nine states' coasts and developed maps depicting areas that could be added to the CBRA System in the states. The draft maps were released for public comment, and notices of the maps' availability were provided to governors, state and local officials, and the general public. After public comment and review, the maps were finalized by the USFWS and transmitted to Congress in April 2022 for action. Only Congress can enact the maps.

The Hurricane Sandy maps would add roughly 277,000 acres to the CBRA System. Undeveloped barrier island areas, beaches and spits, along with inlets, wetlands, and other estuarine areas would be added to the System and receive its unique protection from federal development subsidies. Nine states would gain acreage:

- New Hampshire: 681 acres
- Massachusetts: 32,746 acres

- Rhode Island: 1,544 acres
- Connecticut: 5,248 acres
- New York: 19,799 acres
- New Jersey: 71,492 acres
- Delaware: 31,216 acres
- Maryland: 19,008 acres
- Virginia: 96,435 acres

Congress should enact the maps of areas in the South Atlantic and Gulf of Mexico.

The USFWS has also identified areas in the South Atlantic and the Gulf of Mexico that qualify for inclusion in the CBRA and has developed maps that were reviewed and commented on by the public, finalized by the Service, and transmitted to Congress for action. These maps should also be enacted by Congress to maximize CBRA's benefits in these coastal regions. The bipartisan Senate bill, the "Strengthening Coastal Communities Act," and legislation introduced in the House in September 2023, H.R. 5490, the "Bolstering Ecosystems Against Coastal Harm" Act, would enact the Hurricane Sandy and South Atlantic and Gulf of Mexico maps. Expanding the CBRA to include these areas makes good economic and environmental sense and would increase and improve the nation's coastal resiliency.

3. Expand the definition of a coastal barrier.

When the CBRA was written in 1982, it defined "coastal barriers" as primarily composed of unconsolidated sediments, such as islands and beaches, reflecting the kinds of landforms that are dominant along the Mid- and South-Atlantic and Gulf of Mexico.

In 1990, Congress updated that definition in recognition of the fact that other coastal landforms and aquatic areas also act as "coastal barriers" since they shield upland communities from storm and hurricane impacts and erosion, and provide important habitat. Congress added areas like granitic outcroppings in New England to the definition of a coastal barrier, and consolidated landforms like the Florida Keys. Congress also extended the CBRA to areas along the Great Lakes, reflecting the role that landforms along the Lakes play in reducing upland storm damages and providing habitat. Congress also added wetlands, marshes, and estuarine areas to the definition of a coastal barrier, in recognition of the vital role that these areas play in slowing storm impacts and supporting wildlife.

As our scientific understanding of coastal processes has grown, Congress has responded by updating the definition of a coastal barrier. Another update is now needed to reflect new information about sea level rise and its impacts that's been learned since the last definition update in 1990. The bipartisan Senate "Strengthening Coastal Communities Act" would update the definition of a coastal barrier to include bluffs and areas that are and will be vulnerable to coastal hazards, such as flooding, storm surge, wind, erosion, and sea level rise. As I noted earlier in this testimony, the science of sea level rise is well-established, and federal agencies such as the Army Corps of Engineers, Department of Defense, NOAA and the Federal Emergency Management Agency are moving forward with programs to address sea level rise and its impacts. The CBRA must be updated to reflect what other federal agencies are doing and to keep CBRA current with scientific information. House legislation on CBRA should include the full definitional change to CBRA that is in the bipartisan Senate bill.

H.R. 2437

Regarding H.R. 2437, a bill to revise the boundaries of the CBRS in Topsail, North Carolina, it is my understanding that H.R. 2437 is contrary to CBRA and would result in significantly increased taxpayer burdens. The bill would remove around 660 acres of land from the CBRS unit, which was established in 1982. There have been arguments that the area had infrastructure in place when it was added to the CBRS in 1983, and that therefore, it didn't meet the definition of an "undeveloped area" and shouldn't have been included in the CBRA System. But the Fish and Wildlife Service determined that the unincorporated north end of Topsail Island was largely undeveloped in 1982, the land met the criteria to be placed within the CBRS, and therefore, the area was correctly added to the CBRS in 1983. The USFWS testified to the legitimacy of the inclusion of this area in the CBRS in testimony before Congress in 2014, and again in the 2016 "Final Report to Congress" on a pilot project that began the process of digitizing the CBRS maps.

Lawsuits challenging the inclusion of the area in the CBRS have likewise failed. A district court judge ruled that the CBRA designation was justified, and the court of appeals upheld the district court's ruling and dismissed the case.

If this area is removed from the CBRS, the federal taxpayer will be required to pay for expensive beach renourishment projects that the town wants the Army Corps of Engineers to undertake. The town of North Topsail Beach is proposing to nourish roughly 5,000 feet of shoreline every two years at a total cost of more than $58 million over 30 years. As of the 2020 census, the town of North Topsail Beach has 1,000 residents, and the federal taxpayer would be required to help foot the bill for a nearly $60 million beach renourishment project to benefit a handful of local residents.

The Fish and Wildlife Service has determined that the area was rightly included in CBRA, and a district court and court of appeals have upheld that determination. H.R. 2437 is not warranted.

CONCLUSION

We strongly support the Coastal Barrier Resources Act, and we urge Congress to plan for tomorrow's challenges today by drawing on innovative state programs to implement a two-year Coastal Hazards Pilot Project. We also call on Congress to protect today's vulnerable coastal areas by enacting the "Hurricane Sandy maps" and associated maps. And we support an update to CBRA's definition of a "coastal barrier" to accurately reflect coastal conditions and scientific advances in understanding sea level rise.

Thank you for the opportunity to testify.

Mr. BENTZ. Thank you, and I thank the witnesses for their testimony. I will now recognize Members for 5 minutes each for questions.

Ms. Kiggans, you are recognized for 5 minutes.

Mrs. KIGGANS. Thank you, Mr. Chair. My first question is for Dr. Hein from VIMS.

Thank you again for being here. Barrier islands, obviously, serve a critical role in protecting inland communities. Can you speak to some of the benefits of leaving this land undeveloped?

And would the barrier islands be as effective, were they to be built up for commercial or recreational use?

Dr. HEIN. Thank you, Congresswoman. In short, no.

There is a large difference between a built barrier island and one that is allowed to do as it wants. I gave the example before of the Virginia Eastern Shore, where these islands are moving at tens of feet per year in some cases. And that generally happens during large storms. Well, if you have a house that is built on the island, or you have one that is behind the island, that island wants to move underneath it, and the house doesn't move. At least not without a lot of time and effort and money.

So, what happens is that house ends up on the front side. That house also then stops that process of the island naturally adjusting to the storms that occur, to changes in the rate of sea level rise. So, it slows the entire natural process down quite a bit, and makes the whole island system less resilient.

What we could do is, you know, you can nourish beaches, you could harden the shoreline. But eventually, as sea level rises, those storms want to move those barriers landward. They are moving up a slope. That is what they do. That is how they have survived for 7,000 years. If you stop that from happening, the barrier is just going to drown from both sides. And that is the risk to many of our developed barriers around the country and world.

Mrs. KIGGANS. Thank you. And I read in your testimony that barrier islands on the Eastern Shore of Virginia are moving more than 20 feet toward land per year due to storm surges and erosion.

So, folks on the Eastern Shore are already concerned with shoreline movement or sea level rise impacting their homes, businesses, and families. How does the movement of the barrier islands impact their effectiveness and what they should be doing?

And what should we be thinking about as a 10, 20, or 30-year plan for science-based adaptive management of our barrier islands?

Dr. HEIN. Well, to start, I think that it is important to think about barrier islands or these coastal systems as two parts. There are two different shorelines that are moving. Mr. Stiles spoke very nicely of the wetlands side, where on the upland side marshes and wetlands want to move up into, on the Eastern Shore it is largely farmland, but some communities, as well.

On the other side of it you have the open ocean piece, which is the barrier island migrating. Over time, yes, the barriers are moving so quickly that you are shrinking the back barrier lagoon, and it will be hundreds of years before those islands get anywhere near the mainland. That is good. They should be moving. The closer they are to the mainland, the more they can protect their marshes, they take the brunt of those storms, and they move with it. They take a hit, they step back, and then naturally rebuild their elevations.

The challenge is on the other side, where we stop those marshes from moving upland. So, you have one side that is not moving and the other side of the island is moving ever closer, and that shrinks the whole ecosystem, reduces its services and anything from storing carbon to providing habitat for commercial fisheries. And that is where I think the real challenge is here, looking forward for the Eastern Shore, is the flooding of the upland, allowing that to happen, while letting the barriers do much of what they do, which is take the brunt of storms, regenerate, and keep trucking on.

I will also note, though, that one of the challenges there, of course, is accelerated sea level rise. These processes are inevitable. Yes, climate change is, of course, happening. Sea level is, of course, rising. But beyond that, even if it were to stop tomorrow miraculously, these islands are going to continue to move. They haven't quite caught up to the rate of sea level rise today. So, let them.

Mrs. KIGGANS. Mr. Stiles, we have heard a lot today about a proposed coastal hazard pilot program. My concern with that is that the U.S. Fish and Wildlife Service has not fully remapped its existing System. So, would it not be better for the Service to fully grasp the needs of the existing System first before starting a new endeavor aimed at possibly expanding the System inland?

Mr. STILES. I think that some multi-tasking would be useful. It is going to take a while to figure out what to do. It has taken Virginia a long time. Under the leadership of former Natural and Historic Resources Secretary Strickler it has taken Virginia a long time to figure out how to approach this. We are still working it out. Those statutes that were passed, we are still trying to figure out how they are actually going to be implemented.

I think you could do both. You could continue the mapping, but it is going to be a long conversation about how we are going to deal with the System in the future.

Mrs. KIGGANS. Thank you very much.

I am out of time. I yield back.

Mr. BENTZ. Thank you, Mrs. Kiggans. The Chair recognizes Ranking Member Huffman for 5 minutes.

Mr. HUFFMAN. Thank you, Mr. Chairman, and I do have a couple of questions for witnesses, but before I do that let me just pause and say how refreshing it is to be part of a hearing where we are having a conversation where a colleague across the aisle is asking thoughtful, science-based questions, and we are talking about the difficult trade-offs and policy choices that adaptive management impels us to make. It doesn't often happen in this Committee, the Natural Resources Committee, where it can sometimes feel like a fact-free, science-free zone. But this is good stuff, and I want to commend my colleague and the witnesses for a really important conversation. And you, Mr. Chairman.

Mr. Stiles, you have a lot of experience helping communities adapt to sea level rise. And with that in mind, could you share with us why it is so important to be proactive in identifying currently undeveloped areas for designation within the Coastal Barrier Resource System, as the pilot program in the Senate bill proposes?

Mr. STILES. The process that I was describing of the intertidal zone moving uphill is the big issue. Wetlands in our part of the world can move vertically about 2 feet a century. The rates of sea level rise we are seeing exceed that. And, therefore, the only way that they can get out of the way is to move uphill onto the fast land behind where the wetlands are.

So, this is all new stuff. The steps that Virginia has taken, as I said, were first in the nation. And we are still trying to work it out. There is a lot of work that needs to be done. But the idea, basically, is trying to slow the development on the land behind so that the wetlands can move uphill. But when you do that, there are lots of things in the way like people, like roads, like everything else. So, it is going to take quite a long time to figure out the conflicts, the use conflicts, the conflicts between the public good of maintaining the wetlands and the private resources, the issues that came up in the Topsail bill, for example.

So, I think it is essential that we begin to look at this now because, as Dr. Hein said, this system will move uphill.

So, we have to identify places where it can move, where people can be moved out of the way to avoid the higher risk that is coming, things like what Maryland is doing with its mapping program, where it is beginning to map the migration corridors. I think that is all part of the solution.

Mr. HUFFMAN. And it sounds like this will inevitably present us with some inconvenient, difficult choices. But why is it important to begin to proactively use CBRA in terms of benefits to inland communities, coastal ecosystems, and the American taxpayers?

Mr. STILES. Well, I think the CBRA System is poised to examine these issues. It is a huge holding for the taxpayers, a resource for

the people. And I think that it is a system that is going to see these impacts first. And I think that that is why we need to study it.

It also helps to bring the resources of the Federal Government into this. For the longest time, it has been mostly local governments having to deal with it because they see the impacts right in their backyard. State government is beginning to deal with it, as I said, like the state of Virginia has done. But the Federal Government has, outside of a few examples like the joint land use studies that are taking place in Virginia or some of the examinations that were done by NASA with its facilities, it has 85 percent of its assets within 8 feet of sea level rise, outside of a few isolated Federal examinations of this issue, there really hasn't been a concerted effort to look along the entire shoreline to figure out how we are going to do this. And that is where I think bringing the knowledge and expertise of the Federal Government into it along the whole reach of the shoreline would be very useful.

Mr. HUFFMAN. Thank you.

Mr. Strickler, there is some language in H.R. 2437 that I am concerned could open the door to a lot of litigation, could be problematic for Fish and Wildlife Service to interpret. Could you speak to that, please?

Mr. STRICKLER. Thank you, Mr. Huffman. Yes, we have heard the stated intent of the legislation is to remove a significant amount of the developed area on North Topsail from the CBRS unit. However, there has been, since the time that the unit was included in the System, a lot of development and a lot of subdivision. So, it is unclear to us exactly how properties would be determined in or out. And I think there could be a lot of disagreement over that.

Mr. HUFFMAN. All right. I appreciate that.

I yield back, thanks.

Mr. BENTZ. Thank you. The Chair recognizes Congresswoman Hageman for 5 minutes.

Ms. HAGEMAN. Thank you, Mr. Chairman. My bill, the Pilot Butte Power Plant Conveyance Act, as described in my opening statement, requires the Bureau of Reclamation to enter into good faith negotiations with the Midvale Irrigation District for the conveyance of the Pilot Butte Power Plant located in Pavilion, Wyoming. And as we have heard from our witnesses, this conveyance is a net positive for all parties involved.

Before the project was mothballed in 2008, it was estimated that the cost needed to repair the facility was around $3 million, and it was determined by the Bureau of Reclamation that it was no longer economical to operate. The Bureau now estimates that the cost of recovering the power plant through repairs is between $4.5 to $8 million, and as has been explained, this exchange is in the financial interest of both the United States and in the overall interest of Midvale Irrigation District's 940 water users.

Mr. Lynn, do the water users within the Irrigation District have a vested interest in assuming responsibility of this project?

Mr. LYNN. Thank you for the question, Congresswoman. Yes, they are. They are in favor of gaining the ability to be able to produce power, as it has been a topic of discussion for the District and its users for several years.

As the hydropower study that was done in 2016 indicates, there are several places on the District that would produce power due to the natural fall, the topography, drop structures, and whatnot, but none as beneficial as the power plant.

Ms. HAGEMAN. OK. Can you describe Midvale Irrigation District's preparedness to assume responsibility of title ownership on top of the maintenance and operation costs?

Mr. LYNN. Yes, Congresswoman. Midvale is geared to self-perform a lot of the work there. We are a pretty unique family there. We do what it takes, most all the work necessary to remodel the power plant structurally, preparing for the next phase for consultants and vendors to analyze the hydrologic aspects of the attributes of the power plant and design the new generation equipment to maximize the CFS and head that is available.

Ms. HAGEMAN. OK. Mr. Lynn, both you and the Bureau have highlighted the benefit of divesting liability for Federal interests in water users. Aside from shifting the burden of cost from one party to another, why do you believe that this conveyance is so important to the state of Wyoming?

Mr. LYNN. Congresswoman, thank you. Midvale is committed to do whatever is necessary to keep costs down regarding its service to our customers, therefore later on here to the state.

Farmers and ranchers depend on the District for their livelihoods. Cost to remodel the power plant in-house would be minimal, compared to contracting it out. Once the power plant is ready to go on-line, the benefit of the power production to our customers would be seen in minimizing the cost of services that we provide.

To Wyoming, the conveyance would set a precedent, I believe, with irrigation districts throughout the state to take the initiative in analyzing where they could produce power, utilizing their conveyances and natural topography.

Conveying the Pilot Butte Power Plant to Midvale Irrigation District puts control and investment, our hearts and minds of the District and its constituents there locally. Self-sufficiency is Wyoming.

Ms. HAGEMAN. And one of the things we are seeing in Wyoming right now is that one of our largest utilities is seeking a 30 percent increase in rates for our Wyoming citizens because of some of the decisions that they have made over the years in using unreliable energy resources. So, having the access to the hydrologic resources, as well as being able to be self-sufficient is extremely important at this time. Wouldn't you agree with that, Mr. Lynn?

Mr. LYNN. Yes, ma'am. It is a timely situation with what we are seeing with the current plan.

Ms. HAGEMAN. Yes. Mr. Lynn, with the cyclical nature of the hydrologic situation in the West and increased vertical integration in power production in Wyoming, why is your project timely at relieving costs and burdens for water and power consumers?

Mr. LYNN. Well, I think we just covered that. With the way things are going with the local power producer, I think that we would like to see some alternatives that are produced locally.

Ms. HAGEMAN. And this project would provide that?

Mr. LYNN. Yes, ma'am.

Ms. HAGEMAN. All right, wonderful. Thank you.

Mr. Chairman, I echo the sentiment of Mr. Lynn, and this conveyance provides significant benefits to Wyoming and the Federal Government.

I thank you, and I yield back.

Mr. BENTZ. Thank you, Ms. Hageman.

And Dr. Murphy, you are recognized for 5 minutes.

Dr. MURPHY. Thank you, Mr. Chairman. My comments will be in reference to H.R. 2437.

Thank you, Mr. Leonard, for coming. I just wanted to ask you again to review why you think CBRA designation was incorrect in North Topsail.

Mr. LEONARD. Yes, Congressman, thank you. At the time the CBRA was enacted, there was a full complement of infrastructure within the town. We had roads, we had utilities, we had met all the requirements to be exempted from CBRA.

The issue was once the mapping had to be done, there was a year to do it, and the mapping was done via aerial photography, and the aerial photography did not disclose the full complement of infrastructure that was on the ground at the time. At the same time the infrastructure was there, but the development in certain areas was not. And these two together were tied to the point where it should have been an either/or per the original CBRA regulations, but it was not. In the areas that there was development and infrastructure, those areas were left out of CBRA, but there was infrastructure in the remainder of the area of the town, which should have disqualified those areas from being placed into the CBRA System.

Our town is no different than the other two towns on Topsail Island, Surf City and Topsail Beach. Those towns were left out of CBRA, and we are just asking to be removed from CBRA.

Dr. MURPHY. Approximately how many square miles?

Mr. LEONARD. I can't give you the square miles, sir, but we are looking at the total area of L06 is 5,865 acres, and we are asking for 590 acres of that 5,865 to be removed.

Dr. MURPHY. 590 acres?

Mr. LEONARD. Yes, sir, 590 acres. It is roughly 10 percent.

Dr. MURPHY. So, a really small amount of land that already had infrastructure in it.

Mr. LEONARD. Yes, sir, and was developed.

Dr. MURPHY. All right, thank you. I will get back.

Mr. Strickler, have you ever been to the area in question?

Mr. STRICKLER. Dr. Murphy, thank you for the question. I spent a lot of time on North Carolina's Outer Banks. It is a beautiful place and a unique part of the world. I was talking to Mr. Leonard earlier. I have not had the pleasure of visiting North Topsail.

Dr. MURPHY. All right. So, my district, I am very blessed. When I get to go home, I get to go to the beach. It is great. I have about 80 percent of North Carolina's beaches.

So, is it common for the Fish and Wildlife Service to designate areas with a CBRA designation that already have infrastructure present?

Mr. STRICKLER. Thank you for the question. When the Fish and Wildlife Service reviews a unit for inclusion or exclusion in the Coastal Barrier Resources System, they do a comprehensive review

of whether or not the level of development and the level of infrastructure meet the requirements in the statute. When the level of development and infrastructure meets the requirements for exclusion, it is uncommon for a unit to be included in the System.

Dr. MURPHY. All right. So, as I am understanding, again, this was done aerially and not somebody on the ground, and I think it is important when we are dealing with the livelihoods of veterans, homeowners, people that just want flood insurance, that actually somebody who is going to be opposing this actually sees what they are talking about. It would be nice to have that. So, I don't think it is too much to ask for somebody to take a drive down there and take a look at it if you are going to oppose it.

It seems like, if you already had infrastructure in place, that the designation is an error.

They have created lands, I mean, they have created houses. They have a whole new development on there. All the folks in North Topsail are asking for 10 percent of this designation to allow individuals to get national flood insurance, to be able to get VA loans, not to push the other 90 percent out. They are not asking for much.

And yes, I understand all about wetlands. Good lord, I have a Waters Conference every year. I am having that in 2 weeks to look at inland flooding, to look at water, sea level rise, to look all of these things. So, it is nothing that I don't know the science of. I know it very, very well. But in this instance, an error was made, and somebody just needs to admit it. The Federal Government makes those mistakes. OK? We can't just keep on saying, "Well, no, we didn't make a mistake, we didn't make a mistake." I think the ask is genuine. I think it is very minimal, just that an error was made, that it be corrected.

So, if infrastructure was already present in that time, an error was made by the Fish and Wildlife Service. So, I would say this to the members of the Committee. This is not a big lift. This is not a heavy lift. People are already there, 10 percent, less than 600 acres. I really think the request should be granted. The Federal Government makes mistakes. We have made mistakes all during COVID, and this is another mistake. I would hope that the Committee would allow it to be corrected.

With that, I actually just want to ask Mr. Hein one question.

Mr. BENTZ. I am sorry, but we are over time.

Dr. MURPHY. I am out of time, OK, I can't see a time thing. Well, thank you. With that, I will yield back.

Mr. BENTZ. I thank the witnesses for their testimony and the Members for their questions.

The members of the Committee may have some additional questions for the witnesses, and we will ask you to respond to these in writing. Under Committee Rule 3, members of the Committee may submit questions to the Subcommittee Clerk by 5 p.m. Eastern on Tuesday, October 3. The hearing record will be held open for 10 business days for these responses.

If there is no further business, without objection, the Subcommittee stands adjourned.

[Whereupon, at 11:11 a.m., the Subcommittee was adjourned.]

[ADDITIONAL MATERIALS SUBMITTED FOR THE RECORD]

Statement for the Record

U.S. Bureau of Reclamation

on H.R. 3415 and H.R. 4385

H.R. 3415, Pilot Butte Power Plant Conveyance Act

The Bureau of Reclamation (Reclamation) has constructed numerous dams, canals, and hydropower plants that provide water and power across the 17 western states. For most of these project facilities, Reclamation has transferred all or part of the responsibility for operation, maintenance, and replacement to a project beneficiary. Title, or ownership, to Reclamation facilities, however, remains with the U.S. Government unless Congress passes legislation directing otherwise.

The transfer of title divests Reclamation of responsibility for the operation, maintenance, replacement, management, regulation of, and most of the liability for Federal interests in lands and project facilities, while providing non-Federal entities with greater autonomy and flexibility to manage the facilities.

From 1995 through 2019, Reclamation conveyed title of 32 projects or parts of projects across the West pursuant to various acts of Congress. These title transfers generally have provided mutual benefits to both Reclamation and the non-federal entities involved. The title transfer process followed a framework that Reclamation and its partners collaboratively developed, but which required the passage of individual acts of Congress.

In 2019 the John D. Dingell, Jr. Conservation, Management, and Recreation Act (P.L. 116-9) was signed into law. Title VIII of this Act provides Reclamation with new authority to transfer title to certain eligible facilities to qualifying entities without separate and individual acts of Congress. Section 8002(3)(B) of P.L. 116-9 included provisions that excluded title transfer authority for certain facilities, including for any reserved works as of the date of enactment. Since enactment, title to 12 additional projects or parts of projects have been conveyed under this new authority. The term "reserved works" means any building, structure, facility, or equipment that is owned, operated, and maintained by Reclamation.

The Pilot Butte Power Plant is a reserved work and is part of Reclamation's Riverton Unit, as incorporated into the Riverton Unit of the Pick-Sloan Missouri Basin Program by the Act of September 25, 1970 (Public Law 91-409). The Powerplant receives water through the Wyoming Canal and discharges water directly to the Pilot Butte Reservoir. The Wyoming Canal and Pilot Butte Reservoir are Reclamation facilities for which the operation and maintenance has been transferred to the Midvale Irrigation District (District) via contract with Reclamation.

The Powerplant started generating power in 1925. The Powerplant was taken out of service in 1973 due to high operation and maintenance (O&M) costs as well as a deteriorating penstock. The penstock was replaced and the Powerplant was put back into service in 1990. From 1990 through 2008, the Powerplant operated seasonally from mid-April through late September. In 2007, Reclamation estimated the cost of needed repairs to continue to operate the Powerplant to be approximately $3.2 Million. In 2008, the Powerplant was placed in a mothballed status (removed from service) because it was no longer economically viable to operate it. In 2016, the Wyoming Water Development Office estimated these repairs to cost between $4.4 and $8.3 Million.

As a reserved works, the transfer to the Pilot Butte Power Plant and related facilities is not eligible under the authority granted to Reclamation and requires an act of Congress. H.R. 3415 would provide Reclamation with the authority to convey title of the Power Plant to the district, subject to the necessary leases, permits, rights-of-way, easements, and terms necessary to ensure: the title transfer would not result in an adverse impact on existing water or power delivery obligations, that it complies with all applicable federal and state laws, and that conveyance of these facilities is in the financial interest of the United States. As the facilities have been removed from service, transfer of the facilities would minimally reduce costs associated with ongoing operation and maintenance and would potentially eliminate costs associated with removal and demolition, as necessary.

Section 3 further directs Reclamation to enter into good faith negotiations to enter into an agreement within two years with the District to determine and outline a framework for the terms of conveyance of the Power Plant. It requires a report to Congress, if conveyance is not completed within a year of enactment, outlining the

status of the conveyance, any obstacles to completion, and the anticipated date of completion.

Section 6 directs Reclamation to provide an equal share with the District for the administrative costs for the conveyance of the Power Plant to the District. It should be noted, under P.L. 116-9, administrative costs for conveyance are fully the requester's expense.

The Department supports the conveyance of the Power Plant to the District, as outlined in H.R. 3415, and if enacted and subject to appropriations, Reclamation would work to negotiate an agreement that ensures the transfer is mutually beneficial to the United States and the District. The Department supports H.R. 3415 and looks forward to working with the bill sponsor to address any necessary technical edits.

H.R. 4385, Drought Preparedness Act

The West faces severe water reliability challenges due to climate change, persistent drought, and increasing water scarcity. The changing climate in the West highlights the need for thoughtful planning and work to ensure our infrastructure is more resilient and that planning for changes in land use are considered over the long-term. Reclamation's Drought Response Program is an important program by which Reclamation provides assistance for drought planning and mitigation. The Drought Response Program's authority is derived primarily through the Reclamation States Emergency Drought Relief Act of 1991 (43 U.S.C. 2211) as well as Title IX, Subtitle F of the Omnibus Public Land Management Act of 2009 (42 U.S.C. 10364(a), SECURE Water Act).

The Reclamation States Emergency Drought Relief Act of 1991 (Act) is set to expire at the end of Fiscal Year 2023. If enacted, H.R. 4385 would extend the authorities provided by the Act through 2028. With the Drought Response Program, Reclamation relies on the authorities provided by the Act for drought contingency planning and emergency actions. Reclamation is expected to reach the current cost ceiling $130 million within the next year. If enacted, in order to implement the program through 2028, Reclamation would need an increase in the cost ceiling.

Through the Act, Reclamation provides financial assistance on a competitive basis for applicants to develop drought contingency plans or to update existing plans. In general, the planning process is structured to help planners answer key questions on recognizing, understanding the impacts of, and determining how to protect themselves from drought. It also encourages an open and inclusive planning effort that employs a proactive approach to build long-term drought resiliency.

The Act also allows for Reclamation to undertake emergency response actions under the Drought Response Program to minimize losses and damages resulting from drought, relying on the authorities in Title I of the Act. Emergency response actions are crisis driven actions in response to unanticipated circumstances. As defined within the Act, eligible emergency response actions are limited to temporary construction activities such as storage and conveyance, and temporary water purchases through contracts not to exceed 2 years. The construction of permanent facilities is not eligible under the Act.

The Reclamation States Emergency Drought Relief Act of 1991 is an important authority for Reclamation to continue to respond to and mitigate the impacts of drought. Assuming the cost ceiling is increased in line with the extension, the Department fully supports the extension of the authorities provided in the Act through 2028 as outlined in H.R. 4385 for drought contingency planning and emergency actions.