THE STATE OF MAINE'S BOATING NEWSPAPER

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Moosehead Lake's KATAHDIN Gets a New C-18 Caterpillar

KATAHDIN sitting at her dock on Moosehead Lake in Greenville. You can see that the bubbling system keeps the ice away from the hull even in the extreme depths of winter.

GREENVILLE – MOOSEHEAD LAKE – There are a number of historic craft on the coast of Maine, mostly schooners, which draw hundreds of tourists every year to either sail on or just admire. However, one of the best diamonds in the ruff, and draws equally as much admiration, is on an inland lake. She is KATADHIN, fondly known as KATIE, which is operated by the Moosehead Marine Museum on Moosehead Lake in Greenville.

Nearly two years ago, 20 July at exactly 1245 hrs., KATIE developed a serious issue with her number two diesel engine. Liz McKeil, who heads the Moosehead Marine Museum, added, "A day that lives in infamy at the Moosehead Marine Museum. The number two engine dropped a valve and threw a rod and began spewing oil. The vapors from the oil…they couldn't clap off the air intake because the oil was too hot to get to it so what was happening was that it was pulling in those vapors and so number one engine started to run away. What they did was shut off the fuel to the engine and starved it so that it would eventually shut down. In the mean time a fire started. The crew got a fire hose and aimed it down the stairs from the engineer's quarters into the engine room. There is a little bit of space above the bulkhead and they got it in there. Normally you don't put water on an oil fire but I did some research online and what I learned is if you do that and the water comes in over the oil fire the water will vaporize and steam is actually cooler than oil so the steam sinks down and it suppressed the fire. What they did was the right thing and it worked.

"The other thing that didn't go well at the time, but in the long term was for the best," added Liz, "was that one of her crew members activated the fire suppression system, but turned the crank the wrong way and it didn't activate. They were able to get the fire out with the water but he felt bad. However, that saved pretty much all of the gear down in the engine room, because it would have just been toast. That meant we were able to save the last six weeks of the season."

"The most important thing was it happened just after leaving the dock," continued Liz, "so the captain was able to get the boat headed back toward the dock. We de-boarded people actually on the town dock with a temporary gang plank. We had about 60 or so people onboard plus eight crew and it was roughly 15 minutes from calling 911 to when everybody was off that boat. Our local fire fighters responded immediately. In a small town like this some first responders were actually downtown and they all ran toward the accident so it was amazing how quick the response was."

At the time, KATIE was powered with twin Detroit 610s hooked to a single shaft. Now the problem was 610s are post-World War II and finding parts to rebuild engine #2 was not going to be easy. Believe it or not there were three 610s in Eastport, but they had been removed under a grant and could not be used. However, one was found in Southern New England, which had been used as a generator and had just a few hundred hours on it. Liz added, "In the long run the biggest delay was sourcing and receiving parts and the last thing we received was a set of injectors from Vancouver, British Columbia. I will tell you our local guys know their stuff. They explained to me the 610s are pretty simple engines and after getting the parts it only took a couple weeks to rebuild."

The new C-18 Caterpillar engine sitting in place and being readied for the upcoming season.

As KATIE continued her cruises the remainder of the summer, Liz was making plans to repower that winter. It was learned that there was money available from the gov-

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Advertising Deadlines: The deadline for the June is May 8.
The deadline for the July issue is June 12.

Publisher's Note

There is no question that we are living through an interesting time. It is also interesting to see how others are dealing with it. I have found some going about as normal and others thinking the end was coming. Fortunately, most are practicing safe distancing, staying home and dealing with it. I do not watch the news, because for me it boils down to who do you believe and I do not believe any of them. Most of them have an agenda and could care less about the truth and the impact they cause. That goes for elected officials and special interest groups too.

Just think of how devastated many businesses are and will be. How many were just surviving before the pandemic struck and how will they survive a month or more without an income. They will not and the government does not have enough funds to bail them out. Take that to another level to the employees and how many of them could not pay their normal monthly bills this past month? Again, many of them were living hand to mouth and a month or more without a paycheck and they will not be able to dig themselves out for months or even longer.

In the marine world here in the State of Maine, most are working as they are deemed essential. They are all practicing, as best they can, distancing and shutting their doors to the public. There is a worry and that is how many people will not put their boats in this year? Some of this cannot be blamed on the pandemic, as some were contemplating this because of the downturn in the economy this past winter. Another aspect is the commercial fishing industry, mainly lobstering. Will there be a market for all the lobsters caught? This will depend on how the world's economy rebounds.

I am thinking of this time locked up at home as a trial run for what retirement would look like. I can handle it, but it is not for me, at least at this point. I have got a lot done though. I have finished the 85,200+-vessel database update (Version 2) and should have it up online within a couple of weeks. I have also laid up the lifts on a huge half-hull of the sardine carrier PAULINE, which I am building for next year's Maine's Fishermen's Forum. I did discover that maybe 83 inches by 9 inches by 15 inches might be the limit as trying to move it around was a challenge. I have shaped the deck and keel and now will start carving the hull, which should not take too long to do.

On another note, when putting this issue together I came across the summary from the judge that ruled against NOAA and the lobster fishermen of New England. I have absolutely no use for the groups involved in this case as they could care less about the collateral damage they needlessly cause. This suit is centered on the vertical lines used by lobster fishermen as the cause of deaths amongst the right whale. The government and these special interest groups have forced the Maine lobster fishermen to jump through several hoops that were not warranted. If one looks at the route of the right whale, which is offshore, why do they force the inshore fishermen to comply with rules that have absolutely no effect on the whales? Most should figure out where the problem is and forward well thought out options. If you think I trust the scientists in this case, never, as they have an agenda, usually centered on keeping their cushy job. The government, who should be protecting the industry and the whales, looks for the easy way out and how to keep their cushy jobs. The problem is simple, figure out the migratory routes and

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MCN's Calendar of Waterfront Events

On-going Exhibits

Capt. Paul Cuffe: His Work, Vision and Living Legacy
New Bedford Whaling Museum
New Bedford, MA
Info: (508) 997-0046

After Ryder – Photographs by Nicholas Whitman
New Bedford Whaling Museum
New Bedford, MA
Info: (508) 997-0046

Thou' Shall Knot: Clifford W. Ashley
New Bedford Whaling Museum
New Bedford, MA
Info: (508) 997-0046

"The SPRAY will Come Back": Sole Circumnavigator Captain Joshua Slocum
New Bedford Whaling Museum
New Bedford, MA
Info: (508) 997-0046

When this You See, Remember Me: The Photography of Everett Scholfield and George Tingley
Mystic Seaport
Mystic, CT
Info: mysticseaport.org

Voyaging in the Wake of the Whalers
Mystic Seaport
Mystic, CT
Info: mysticseaport.org

Death in the Ice: The Mystery of the Franklin Expedition
Mystic Seaport
Mystic, CT
Info: mysticseaport.org

MAY

4-7 ASMFC Spring Meeting
Westin Crystal City
Arlington, VA

15-17 Maritime Weekend
New Bedford Whaling Museum
New Bedford, MA
Info: (508) 997-0046

JUNE

20 Boothbay Lobster Boat Races
Boothbay Harbor
Info: Ashlee Lowrey (207) 808-9230

21 Rockland Lobster Boat Races
Rockland Harbor @ Breakwater
Rockland
Info: Nick O'Hara (207) 542-4348
Mike Mayo (207) 542-1879

28 Bass Harbor Lobster Boat Races
Bass Harbor
Info: Colyn Rich (207) 479-7288

JULY

4 Moosabec Reach Lobster Boat Races
U. S. Coast Guard Station
Jonesport
Info: Jay Mills (207) 598-6347

12 Stonington Lobster Boat Races
Town Dock
Stonington
Info: Cory McDonald (207) 664-4525
Genevieve McDonald (207) 266-5113

19 Friendship Lobster Boat Races
Town Dock
Friendship
Info: Robin Reed (207) 975-9821

26 Harpswell Lobster Boat Races
Harpswell
Info: Amanda Peacock (207) 756-3104
Kristina York (207) 449-7571

29 Castine Classic Yacht Symposium
Maine Maritime Academy
Castine

30 Castine Classic Yacht Race
Castine Yacht Club
Castine

AUGUST

8 Winter Harbor Lobster Boat Races
Town Dock
Winter Harbor
Info: Chris Byers, (207) 963-7139

14-16 WoodenBoat Show
Mystic, CT
Info: www.thewoodenboatshow.com/

15 Long Island Lobster Boat Races
Ferry Dock
Long Island
Info: Lisa Kimball (207) 332-3968
Amy Tierney (207) 317-1576

16 M. Brackett Lobster Boat Races
State Park Restaurant
Pemaquid
Info: Brent Fogg (207) 350-7163/563-6720
Sheila McLain (207) 677-2100

16 Portland Lobster Boat Races
Portland Yacht Services
Portland
Info: Katie Werner (207) 807-1832

SEPTEMBER

17-20 Newport International Boat Show
Newport, RI

26-27 Maine Small Craft Celebration
Portland Yacht Service
Portland
Info: (207) 774 1067

OCTOBER

2-4 Maine Boat Show
Thompson's Point
Portland

17 Annual Meeting & Awards Banquet
Robinson's Wharf
Southport Island
Info: Jon Johansen (207) 223-8846

THE GHOST - A Lost chance for the Navy?

PORTSMOUTH, NH – A number of people going over the middle bridge between Portsmouth, NH and Kittery, Maine, have noticed a strange looking watercraft on the hard. This watercraft sort of looks like the bug that floats on top of the water. If you look at the cabin you can see her name, THE GHOST, and if you Google this you will see just how innovative her design is, especially how she sails compared to a traditional hull in moderate or heavy seas.

There is no question that the U. S. Navy has a gap in its defenses as proven by the attack on the destroyer USS COLE and the Millennium Challenge Exercise of 2002. This proved that a large group of small high-speed craft could overwhelm a conventional surface force and do considerable damage with extensive loss of life. Anyone who thinks that our enemies have not noticed this issue, you are wrong, and this could have catastrophic consequences.

This project started with Gregory Sancoff who brought together investors, engineers and those with an understanding of the U. S. Navy and her needs and formed Juliet Marine Systems (JMS). Before this Sancoff had spent three decades developing breakthrough technology in the field of healthcare. Here he developed 87 patents and inventions that improved medical care. The team of engineers and naval experts developed a design and began building a prototype in 2007. After almost five years under construction and millions of dollars she was ready for sea trials. A quick glance at her cabin she looks like a F-117 stealth fighter and this translates into a very small radar signature. She is powered with a hybrid engine (twin 1,800-hp gas turbines) and an electric drive. However, what some will miss is that her propellers are on the forward end of the hulls. The engineers developed a way of controlling small waterplane area twin hull (SWATH) vessels at high speed and a method of reducing drag. There are computer systems on board that controls the stability of this vessel at high speed. Also, by mounting the propellers on the forward section of the hull, bubbles are created and this significantly reduces drag. This is termed a super cavitating propulsion system. She carries a crew of two; 16-18 passengers; speed, maximum, 70 knots and can operate at this speed in 6 to 8-foot seas.

The U. S. Navy's Mark V is what is currently in use when introducing soldiers into an area quickly. They have a problem - at high speed the occupants are subjected to hard impacts from bouncing over the waves in a moderate sea state that will decrease their performance in the field. In fact, some have develop broken teeth and back issues. If you watch the video on Youtube, it is impressive to see this boat operate like it is in smooth water when it is actually transiting in a moderate sea state.

The number of applications she can be used for are numerous. She could be used for security, quick transits, law enforcement or pleasure.

What is interesting is that THE GHOST was built for the U. S. Navy at no cost to the taxpayers. When offered to the Navy there was some initial interest. The Office of Naval Research (ONR) sent a contract that said they would take ownership of all the patent rights. Sancoff knew that some of the technology could be used in other applications and giving up the rights would mean that he could not use the technology and he refused to sign the contract. He hoped the Navy would return with a counter-offer and when they did not he offered THE GHOST to foreign allies. When the government heard this they told him that he could not sell it to them and the Navy had the technology used in THE GHOST classified with secrecy orders on four of the patents in October 2009. Now they could not sell or even allow anyone else to see it. Then in August of that year the patents were reinstated and then taken back off again in mid-2011. However, five months later the secrecy orders were lifted. Four years later the Chief of Naval Operations viewed THE GHOST and then asked the ONR about it. The rumour was that they said it was dangerous and it was also rumoured that they were trying to develop their own super cavitating technology.

When JMS was not under secrecy orders they shopped THE GHOST to friendly allies, who after seeing it were interested. Then they received word from the State Department saying that they could not market the system to foreign countries without permission and when asking for permission they would by extremely limited by the State Department's guidelines.

Sancoff reached out to Senator Kelly Ayotte of NH and despite her efforts this has not gone anywhere.

Five years ago, Sancoff took the government to court claiming that the secrecy orders had damaged the company and its ability to market THE GHOST. The government's response was that the secrecy orders had not done any damage to their company. When the case went to court all the government layers did was stall continually asking for extensions. Finally, on 14 August 2018 JMS said that a settlement had been reached with the government. Back on 7 May the parties in the lawsuit met with a federal judge mediator and the Justice Department and U. S. Navy agreed to a judgement in favour of JMS with an undisclosed amount being awarded to JMS.

THE GHOST sitting on the hard in Portsmouth, NH.

Now, four years ago JMS said that they had plans to build a submersible unmanned surface vehicle called GUARDIAN. She is designed as a surface craft, but is fully submersible and Sancoff said that this will fill a military need that is not being fulfilled currently. Some of the design features of GUARDIAN were tested in THE GHOST, but unlike THE GHOST she can be manned or unmanned and can operate underwater. She will be between 30 to 45 feet in length, powered with a diesel with a hybrid electric drive, which will push her along at 35 knots. Since this announcement there has been nothing else said as to the progress.

Why do people stay away from developing items for the government or simply dealing with them? Well, this is a perfect example. In the early history of this country there were several instances where a city or state would fund a vessel and donate it to the government who happily accepted it. There are other times, similar to JMS's issue with THE GHOST, that a private company developed a design for the Navy and were stonewalled even though their design sank during the sea trials. If you want a great example read Andrew Jackson Higgin's biography.

Passed Over the Bar

Alice H. Thompson
October 7, 1939 – December 29, 2019

The world is a little less brighter without the presence of Alice Wood (Hodgdon) Thompson, who left us on a sunny afternoon on Dec. 29, 2019 in Portland, Maine following a brief illness.

Born in Boothbay Harbor on Oct. 7, 1939, she was the daughter of Helen G. (Luke) Hodgdon and Norman H. Hodgdon Jr. of Boothbay Harbor. A lifelong resident of Boothbay Harbor and Southport, Alice graduated from Boothbay Region High School in 1958.

After a brief stint at Colby College, Alice, along with a friend, left for a tour of Europe traveling in a VW van for six months. Upon her return, she had but a few dollars in her pocket and enough stories to regale us with for years.

Always up for fun, her greatest adventure began with her husband and the love of her life, Dick (Richard) W. Thompson. They were married on Aug. 31, 1963 and shared 56 years of happiness. She always said that she "caught" Dick with her cooking and it was during the summer of 1962 when she plied him with meals while he lived aboard his father's boat, Aquila, anchored in the harbor.

Alice continued to "keep having fun" for the next 60 years, always willing to lend a hand or baking a pie (or two) for the church. She continued to nurture her children and devote herself to Dick, all the while working at Hodgdon Yachts in East Boothbay as a bookkeeper for many years.

Always rising to the challenge, when her mother, Helen, became ill with kidney disease, Alice learned how to take care of her and performed dialysis in Helen's home several times a week. To lend a hand, Dick took over the laundry duties and has continued to do so throughout the years, which thrilled Alice.

Always the consummate hostess, Alice and Dick began welcoming guests at Thompson Cottages in 1968 and continued to do so for more than 50 years; many of whom return annually to the beauty of Maine and knowing that they would always receive a warm welcome and a piece of pie.

Alice's devotion to her family and friends was never-ending. Dick, Linda and Hugh and their happiness were the most important priority in her life and with the blessing of her grandson, Collin, who she adored, she spent many hours encouraging his love of the sea and sharing in her love of tennis.

Alice was a member of the Down East Yacht Club and Boothbay Harbor One Design --- a boat for which her father was renowned. In addition, she was a lifetime member of the Order of the Eastern Star, Beacon Chapter #202, Damariscotta.

Close to her heart, her latest endeavor was serving on the board of the Boothbay Harbor Waterfront Preservation. The location is that of her childhood home and the boatyard of her father, Norman H. Hodgdon Jr. She was so pleased that a place that possessed so many fond memories would become a wonderful place for the entire community to enjoy. Her family requests that in lieu of flowers, a donation may be made to the Boothbay Harbor Waterfront Preservation, P.O. Box 55, Boothbay Harbor, ME 04538, or visit www.boothbayharborwaterfrontpreservation.com

Alice leaves her beloved husband, Dick (Richard) W. Thompson of Southport; her well-loved children, Linda J. Thompson of Woolwich and Hugh H. Thompson of Southport; grandson, Collin Thompson of Southport; her sister, Rebecca J. (Hodgdon) Dunn of Port Orange, Florida; along with many nieces and nephews.

She was predeceased by her parents and a sister, Mary E. Hodgdon.

A gathering of family and friends will be held in the spring.

While it has been a labor of love for her family to share remembrances of our beloved Alice, we know that if it had been written by her, it would have been perfect. We will miss her dearly for not pointing out how it could have been done better for now and always.

Dawsie Pierce
1929 August 24 – 2020 March 2

Dawsie Pierce, 90, passed away at home on March 2, 2020. She was born Aug. 24, 1929, to Maude Theodora McGuane Pierce and Franklin M. Pierce in Massachusetts and attended high school in New York. She received her Baccalaureate of Science from Purdue University in 1951 and her Ph.D. from the University of Massachusetts in 1965. She taught and did research in numerous states and taught medical school in the Caribbean and biology at Westfield State College in Massachusetts.

She received her Baccalaureate of Science from Purdue University in 1951 and her Ph.D. from the University of Massachusetts in 1965. She taught and did research in numerous states and taught medical school in the Caribbean and biology at Westfield State College in Massachusetts.

It is hard to describe the many interests of her life: She was a world traveler with many trips across Europe, South America, Russia and Asia. She was extremely knowledgeable in both human and animal physiology and contributed to research in botany, genetics and of female athletes in the Munich Olympics. Other interests and hobbies of hers were becoming an award-winning gardener, avid genealogist for her family and historian for the historical societies of both Orland and Bucksport as well as synchronized swimming, playing tennis, canoeing and enjoying the outdoors. She loved all things music and was a trombone player for the Brewer Hometown Band. Dawsie was a dedicated volunteer of many charitable organizations including food pantries, Habitat for Humanity, Birdsacre/Stanwood Wildlife Sanctuary and other animal sanctuaries including counting turtles in Baja, Calif., and worked with teams after Hurricane Katrina, as well as being a patron of many nonprofit groups.

Dawsie was preceded in death by her parents, sister Francine Pierce Sullivan and brother John Pierce. She is survived by sister-in-law Shirley Pierce; nieces and nephew Allison Pierce, Joan Pierce, Kathy Sullivan Pipes, Lynn Sullivan Gargan, and George Patrick Sullivan, and several grandnieces.

At Dawsie's request, there will be no service. If anyone wishes to make a donation in memory of Dawsie, please consider Stanwood Wildlife Sanctuary in Ellsworth, the Bucksport Animal Shelter or the Historical Society in Orland or Bucksport.

Ordman Charles Alley, Sr.
May 6, 1942 - March 23, 2020

BEALS - Ordman Charles Alley, Sr., 77, went to be with his Lord and Savior Monday, March 23, 2020, at a Machias hospital. Born May 6, 1942, at Beals, Maine, he was one of five children born to Donald Noel and Lizzie Dean (Peabody) Alley, Sr.

Ordie was born and raised on Beals Island, where he attended school, graduating from Beals High School in 1960. He attended what was then Washington State Teachers' College in Machias (UMM), graduating in 1964. While there, he was a member of the KMA Fraternity and played four years of college basketball, where he led all of New England in scoring his senior year.

Upon graduation from college, he began his 13-year teaching career in South-

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Publisher's Note

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when they traverse areas and close it for that time period. Stop using a blanket ruling that adversely effects thousands of people for no reason.

Vertical lines have been associated with right whales on very limited basis, but the biggest problem, which was not addressed, was ship strikes. Areas are deemed 'slow zones' at certain times of the year and last year a government vessel was caught not abiding by the lower speed. Were the lobster fishermen an easy target?

U. S. Coast Guard News

Coast Guard Sector New York Issues Captain of the Port Orders to Bouchard Transportation Vessels

13 February

NEW YORK — The Coast Guard Captain of the Port of New York and New Jersey has issued an order to Bouchard Transportation Company requiring that three tug and fuel barge units currently anchored in New York Harbor immediately be moved out of anchorage and moored at a safe berth. They will be required to remain at safe berth until undergoing additional safety inspections to determine they are fit to return to service.

As a result of recent safety checks, the Coast Guard has determined the operational condition of these vessels poses a risk to the safety of New York and New Jersey waterways. Specifically, Bouchard has been unable to consistently maintain safe fuel and manning levels aboard these vessels, and does not have adequate contingencies in place for emergency weather or other conditions requiring movement within the port.

"My number one priority is to ensure not only the safety of the public and our waterways, but the health and well-being of the crews who do the difficult and hazardous work of operating these vessels." said Capt. Jason Tama, Captain of the Port of New York. "This is not an action we wanted to take, however, we have a responsibility to keep our waterways safe, and Bouchard's inability to maintain safe operational conditions aboard these tugs and fuel barges has forced me to take this step."

There are currently three other Bouchard tug and fuel barge units at anchor in addition to several other Bouchard vessels moored at piers in New York and New Jersey. The Coast Guard is currently closely monitoring these additional vessels to ensure they do not pose a threat to the safety of the port.

Coast Guard, maritime partners receive National Service Award for Golden Ray rescue

6 March

BRUNSWICK, GA — The Coast Guard and maritime partners across Brunswick and Savannah, Georgia, were awarded the ReadyCommunities Partnership 2019 National Service Award for diligence and collaboration in the Golden Ray rescue, Friday.

The award recognizes the leadership of Coast Guard Sector Charleston in coordination with maritime partners across the region including harbor pilots, law enforcement, salvors and others.

The award was accepted by Coast Guard Sector Charleston, Coast Guard Air Station Savannah, Coast Guard Marine Safety Unit Savannah, and Coast Guard Station Brunswick. Capt. John Reed, commander, Coast Guard Sector Charleston, accepted the award on behalf of all maritime partners who participated in the rescue.

The National Service Award was presented by Hon. Cornell Harvey, Mayor of Brunswick, and Dr. Rosalie J. Wyatt, Corporate Crisis Response Officers Association President & ReadyCommunities Partnership National Director.

ReadyCommunities Partnership National Service and Sacrifice Awards acknowledge stakeholders for their role in strategic port community and national resiliency, they also help to build community and foster a culture of resiliency for economic and national security and to protect lives in the first 72-hours of a large-scale or national crisis. Since 2007, the ReadyCommunities Partnership has presented its National Service and Sacrifice Awards to communities, responders, organizations, and citizens for exemplary service and has also honored those who have sacrificed their lives in the line of duty.

For additional information on the Golden Ray rescue please review previous press releases below: Coast Guard, port partners conducting rescue operation for 4 aboard disabled, on fire vessel in St. Simons Sound; Coast Guard rescues crew members from disabled cargo vessel in Brunswick; Coast Guard, salvage crews rescue remaining Golden Ray crew members in St. Simon Sound.

Coast Guard, partner agencies rescue 5 after vessel allides with Charleston jetty

22 March

CHARLESTON, SC — The Coast Guard along with partner agencies rescued five people after the vessel they were on allided with the southern Charleston jetty, Sunday.

The North Charleston Fire Department arrived on scene and safely removed all five people from the vessel and transferred them

to a Coast Guard Station Charleston 45-foot Response Boat—Medium which transported them to Ripley Light Marina.

At approximately 2:10 a.m., Coast Guard Sector Charleston received a report from Sea Tow that the Strike Finder, a 52-foot sport fisher, had allided with the southern Charleston jetty with five people aboard.

A Station Charleston RB-M boat crew, an Air Facility Charleston MH-65 Dolphin helicopter crew and various partner agency assets launched to assist.

Sector Charleston watchstanders con-

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U. S. Navy News

GULF OF MEXICO (Feb. 19, 2020) The Arleigh Burke-class guided-missile destroyer Pre-Commissioning Unit (PCU) Delbert Black (DDG 119) conducts the second builder's trials in the Gulf of Mexico. (U.S. Navy photo courtesy of HII by Lance Davis/Released)

Recruiting Robots: DoD Summit Promotes Robotics in Maintenance and Repair

By Warren Duffie Jr., Office of Naval Research Public Affairs

ARLINGTON, Va. (NNS) -- Inspecting fuel and ballast tanks. Sand-blasting old paint coatings and applying new ones. Removing corrosion on ships, submarines, aircraft and other vehicles.

These are some of the unpleasant jobs in naval shipyards and maintenance facilities that could be made safer by pairing human workers with robots. Experts say this could improve the speed and efficiency with which the U.S. Navy sustains its assets—and expand the career paths of current workers (and create new jobs) by teaching them to operate, repair and supervise robotic systems.

Robots and naval readiness took center stage at the second Joint Summit: Robotics in Sustainment—also called JROBOT—held recently at the Pittsburgh, Pennsylvania, headquarters of the Advanced Robotics for Manufacturing (ARM) Institute. ARM is a Department of the Defense (DoD)-funded consortium comprising government, industry and university partners that advances robotic technologies within the U.S. manufacturing base.

Sustainment deals with the maintenance and repair of military assets over their lifetimes.

"Sustainment is a crucial part of the National Defense Strategy," said Paul Huang, a program officer in the Navy Manufacturing Technology Program located at the Office of Naval Research (ONR), one of JROBOT's partner organizations. "If we can't maintain our assets, they're not helping our warfighters.

"One great aspect of robotic technologies is they're dual-use and have military and civilian applications," he continued. "The government, industry and academia have a vested interest in finding the most innovative solutions to maintenance challenges."

The event was hosted by ARM and endorsed by both the Deputy Assistant Secretary of Defense for Material Readiness and the Office of the Secretary of Defense (OSD) for Manufacturing Technologies. During the summit, JROBOT attendees:

—Recommended OSD policy for including more robotics in sustainment. Attendees formulated policy to enable more coordinated acquisition, training and fielding of robotic systems.

—Designed new job descriptions for the 21st-century's robotic workforce. Established an accepted set of job requirements and competencies for robotics-related work, thereby expanding the capabilities of current workers and improving recruitment and retention. Summit attendees crafted three new robotics job descriptions for delivery to the U.S. Office of Personnel Management: mechanic, operator and engineering technician.

—Selected robot projects to work in partnership with industry. During the summit, seven industry and academic partners pitched ARM-funded robotic systems they created for possible DoD acquisition. Attendees judged and selected five of them, with capabilities including underwater equipment inspection and mixed-reality software to detect defects in materials resulting from wear and tear.

"JROBOT fosters collaboration, recognizes best practices and creates shared investments in robotics," said JROBOT co-organizer Steve McKee, who is a team lead at Naval Undersea Warfare Center Keyport Division in Washington, and oversees several sustainment projects sponsored by ONR.

Robotics can help address challenges such as aging legacy systems and maintenance facilities—and a workforce that's shrinking due to retirements and high turnover.

"Robots are perfect for dull, dirty and dangerous jobs because they don't get injured or suffer from job burnout or boredom," said McKee. "By bringing more of them into our maintenance activities, and partnering them with humans, we can address sustainment needs and create a tech-savvy workforce for the 21st century. We want people who can program and operate robotic systems—not just push a button."

Warren Duffie Jr. is a contractor for ONR Corporate Strategic Communications.

Future USS Delbert D. Black Successfully Completes Acceptance Trials

From Team Ships Public Affairs

PASCAGOULA, Miss. (NNS) -- The future guided-missile destroyer USS Delbert D. Black (DDG 119) successfully completed acceptance trials on March 12, returning to Huntington Ingalls Industries (HII), Ingalls Shipbuilding Division after spending two days at sea in the Gulf of Mexico.

During acceptance trials, the ship's crew performed a series of demonstrations for review by the U.S. Navy's Board of Inspection and Survey (INSURV). These demonstrations are used to validate the quality of construction and compliance with Navy specifications and requirements prior to delivery of the ship to the U.S. Navy.

"The ship performed exceptionally well and demonstrated that the ship is materially ready to execute her mission," said Capt. Seth Miller, DDG 51 class program manager, Program Executive Office (PEO) Ships. "The success of these trials validates this highly capable ship will be a force multiplier when she joins the fleet."

DDG 119 is being constructed with the Aegis Baseline 9 combat system, which incorporates Integrated Air and Missile Defense capabilities, such as increased computing power and radar upgrades, that improve detection and reaction against modern air warfare and Ballistic Missile Defense threats. When operational, DDG 119 and her sister ships will serve as integral assets in global maritime security.

"DDG 119's exceptional performance during these trials is a direct reflection of the teamwork between Ingalls Shipbuilding and the Navy," said the Supervisor of Shipbuilding, Conversion and Repair Gulf Coast, Capt. Nathan Schneider. "I am proud of this ship and I am extremely proud of the Ingalls Shipbuilding and Navy team that built her. Right behind DDG 119 are follow-on DDGs that will be even better, including the first Flight III DDG which is a real game changer."

DDG 119 honors Delbert D. Black, the first Master Chief Petty Officer of the Navy, and will be the first naval ship to bear his name. Black is best known for guiding the Navy through the Vietnam conflict and ensuring proper enlisted leadership Navywide by initiating the Master Chief program.

The future USS Delbert D. Black is expected to be delivered to the Navy later this year. HII's Pascagoula shipyard is also currently in production on the future destroyers Frank E. Peterson Jr. (DDG 121), Lenah H. Sutcliffe Higbee (DDG 123) and Jack H. Lucas (DDG 125), the first Flight III ship.

As one of the Defense Department's largest acquisition organizations, PEO Ships is responsible for executing the development and procurement of all destroyers, amphibious ships, special mission and support ships, and boats and craft.

Chief of Naval Operations Statement on USS Theodore Roosevelt

By Chief of Naval Operations Adm. Mike Gilday,

WASHINGTON (NNS) -- "As testing continues, additional positive cases of COVID-19 have been discovered aboard USS Theodore Roosevelt. We are taking this threat very seriously and are working quickly to identify and isolate positive cases while preventing further spread of the virus aboard the ship. No Sailors have been hospitalized or are seriously ill.

Our medical team aboard USS Theodore Roosevelt is performing testing for the crew consistent with CDC guidelines, and we are working to increase the rate of testing as much as possible. Immediate priority will be symptomatic Sailors, those in close contact with Sailors who have tested positive already, and essential watch standers. We are isolating those who test positive. Testing will continue as necessary to ensure the health of the entire ship's crew. In addition, the medical staff will continue to actively monitor the health of the crew. Deep cleaning of the ship's spaces is also ongoing.

USS Theodore Roosevelt is in Guam on a previously-scheduled port visit. The resources at our naval medical facilities in Guam will allow us to more effectively test, isolate, and if necessary treat Sailors. We expect additional positive tests, and those Sailors who test positive will be transported to the U.S. Naval Hospital Guam for further evaluation and treatment as necessary. During the port visit, base access will be limited to the pier for Roosevelt's Sailors. No base or regional personnel will access the pier.

We're taking this day by day. Our top two priorities are taking care of our people and maintaining mission readiness. Both of those go hand in glove.

We are confident that our aggressive response will keep USS Theodore Roosevelt able to respond to any crisis in the region."

CAPTION:
LOS ANGELES (March 27, 2020) The Military Sealift Command hospital ship USNS Mercy (T-AH 19) arrives in Los Angeles, March 27, 2020. Mercy deployed in support of the nation's COVID-19 response efforts, and will serve as a referral hospital for non-COVID-19 patients currently admitted to shore-based hospitals. This allows shore base hospitals to focus their efforts on COVID-19 cases. One of the Department of Defense's missions is Defense Support of Civil Authorities. DoD is supporting the Federal Emergency Management Agency, the lead federal agency, as well as state, local and public health authorities in helping protect the health and safety of the American people. (U.S. Navy photo by Mass Communication Specialist 1st Class David Mora Jr./ Released)

USNS Mercy Arrives in Los Angeles

From Commander, U.S. Third FLEET Public Affairs

LOS ANGELES (NNS) -- Military Sealift Command hospital ship USNS Mercy (T-AH 19) arrived in Los Angeles, March 27 to support the nation's COVID-19 response efforts.

"The men and women of the USNS Mercy and the United States Navy are honored to be here in Los Angeles supporting FEMA, the state of California, the county and the city in their ongoing COVID-19 relief efforts," said Rear Adm. John E. Gumbleton, Commander, Expeditionary Strike Group Three.

While in Los Angeles, the ship will serve as a referral hospital for non-COVID-19 patients currently admitted to shore-based hospitals, and will provide a full spectrum of medical care to include general surgeries, critical care and ward care for adults. This will allow local health professionals to focus on treating COVID-19 patients and for shore-based hospitals to use their Intensive Care Units and ventilators for those patients.

Mercy is a seagoing medical treatment facility that currently has personnel embarked for the Los Angeles mission, including Navy medical and support staff assembled from 22 commands, as well as over 70 civil service mariners.

Mercy's primary mission is to provide an afloat, mobile, acute surgical medical facility to the U.S. military that is flexible, capable, and uniquely adaptable to support expeditionary warfare. Mercy's secondary mission is to provide full hospital services to support U.S. disaster relief and humanitarian operations worldwide.

U.S. 3rd Fleet leads naval forces in the Indo-Pacific and provides the realistic, relevant training necessary for an effective global Navy. U.S. 3rd Fleet works in close coordination with U.S. 7th Fleet to provide commanders with capable, ready assets across the spectrum of military operations in the Indo-Pacific.

Future USS Fort Lauderdale Amphibious Transport Dock Ship Launched

From Team Ships Public Affairs

Continued on Page 18.

Wood's Hole Oceanographic News

Study reveals rapid sea-level rise along U.S. Atlantic coast in 18th century

During the 18th century, sea levels along a stretch of the Atlantic coast of North America were rising almost as fast as they were during the 20th Century, reveals a new study by researchers at the University of York, Woods Hole Oceanographic Institution (WHOI) and colleagues.

The study, published this week in the journal *Geophysical Research Letters,* found evidence for a multiple-decades-long period of enhanced pre-industrial sea-level rise of about two to three millimeters per year in Nova Scotia, Maine and Connecticut. This is only slightly slower than rates of change in these locations during the 20th century, which were faster than any other century in at least the last 3,000 years. The new findings are based on salt-marsh sediments from the Atlantic coast and from microscopic salt-marsh fossils, which act as "archives" of past sea levels going back hundreds of years.

The researchers say that the large rates of sea-level rise at these locations during the 18th century were natural, and partly related to the North Atlantic Oscillation—a large-scale atmospheric pressure see-saw over the North Atlantic region—and to periods of enhanced ice melt in the Arctic.

"One of the big goals in sea-level research is to say how much of the sea-level changes we're seeing today are due to human actions or are caused by natural processes," says Christopher Piecuch, a physical oceanographer at WHOI and a coauthor of the paper. "Our study takes an important step in that direction and helps put present-day sea-level change more clearly into a longer-term geological context."

Previous studies showed that, since the 1950s, rates of sea-level rise along the Atlantic coast of North America have been increasing more than the global average, possibly related to weakening ocean currents predicted as a result of human-caused climate change. This region has since been called a sea-level rise "hotspot." This new research shows that such periods of enhanced sea-level rise on the Atlantic coast, lasting for multiple decades at a time, can also occur for reasons unrelated to human influences.

"The likely future sea-level rise in places like New York City is expected to be considerably greater than the global average by the end of the 21st century," says lead author Roland Gehrels from the University of York's Department of Environment and Geography. "Our findings suggest that enhanced rates of sea-level rise along eastern North America are not only symptomatic of human activity, but might additionally arise from natural processes in the climate system." The authors of the study say cities like New York and Boston should take this natural variability into account in planning for future sea-level rise.

This research was supported by the National Science Foundation and the Natural Environment Research Council. The research team included colleagues from University of Leeds; Durham University; Bangor University; the National Oceanography Centre, Liverpool; Woods Hole Oceanographic Institution, Massachusetts, USA; Old Dominion University, Virginia, USA; and the University of Siegen, Germany.

Microbes far beneath the seafloor rely on recycling to survive

Scientists from Woods Hole Oceanographic Institution (WHOI) reveal how microorganisms could survive in rocks nestled thousands of feet beneath the ocean floor in the lower oceanic crust, in a study published on March 11 in *Nature.* The first analysis of messenger RNA—genetic material containing instructions for making different proteins—from this remote region of Earth, coupled with measurements of enzyme activities, microscopy, cultures, and biomarker analyses provides evidence of a low biomass, but diverse community of microbes that includes heterotrophs that obtain their carbon from other living (or dead) organisms.

"Organisms eking out an existence far beneath the seafloor live in a hostile environment," says Dr. Paraskevi (Vivian) Mara, a WHOI biochemist and one of the lead authors of the paper. Scarce resources find their way into the seabed through seawater and subsurface fluids that circulate through fractures in the rock and carry inorganic and organic compounds.

To see what kinds of microbes live at these extremes and what they do to survive, researchers collected rock samples from the lower oceanic crust over three months aboard the International Ocean Discovery Program Expedition 360. The research vessel traveled to an underwater ridge called Atlantis Bank that cuts across the Southern Indian Ocean. There, tectonic activity exposes the lower oceanic crust at the seafloor, "providing convenient access to an otherwise largely inaccessible realm," write the authors.

Researchers combed the rocks for genetic material and other organic molecules, performed cell counts, and cultured samples in the lab to aid in their search for life. "We applied a completely new cocktail of methods to really try to explore these precious samples as intensively as we could," says Dr. Virginia Edgcomb, a microbiologist at WHOI, the lead PI of the project, and a co-author of the paper. "All together, the data start to paint a story."

By isolating messenger RNA and analyzing the expression of genes—the instructions for different metabolic processes—researchers showed evidence that microorganisms far beneath the ocean express genes for a diverse array of survival strategies. Some microbes appeared to have the ability to store carbon in their cells, so they could stockpile for times of shortage. Others had indications they could process nitrogen and sulfur to generate energy, produce Vitamin E and B12, recycle amino acids, and pluck out carbon from hard-to-breakdown compounds called polyaromatic hydrocarbons. "They seem very frugal," says Edgcomb.

This rare view of life in the far reaches of the earth extends our view of carbon cycling beneath the seafloor, Edgcomb says. "If you look at the volume of the deep biosphere, including the lower oceanic crust, even at a very slow metabolic rate, it could equate to significant amounts of carbon."

This work was supported by the National Science Foundation.The research team also included colleagues from Tongji University, University of Bremen, Texas A&M University, Université de Brest, and Scripps Institution of Oceanography.

$8.3M award to WHOI extends observational record of critical climate research

The National Science Foundation (NSF) recently awarded $8.3 million to the Woods Hole Oceanographic Institution (WHOI) to extend the life of the Overturning in the Sub-polar North Atlantic Program (OSNAP) in a key part of Earth's ocean-climate system. The award is part of a $15.5 million grant to four U.S. institutions that will help add four years to the record being assembled by the observatory.

OSNAP is maintained by researchers at WHOI, Georgia Institute of Technology, Scripps Institution of Oceanography, and the University of Miami, as well as institutions in the U.K., Canada, France, Germany, and

Continued on Page 23.

Commercial Fishing News

Judge Boasberg's Decision Against NOAA and Lobster Fishing

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

CENTER FOR BIOLOGICAL DIVERSITY, *et al.*, Plaintiffs, v. Civil Action No. 18-112 (JEB) WILBUR ROSS, in his official capacity as Secretary of Commerce, *et al.*, Defendants, and MASSACHUSETTS LOBSTERMEN'S ASSOCIATION, INC., *et al.*, Defendant-Intervenors.

MEMORANDUM OPINION

So named because for centuries they were easy to kill and strip for blubber, North Atlantic "right" whales have been hunted to the edge of extinction. One of the first animals to be protected under the Endangered Species Act, the population nonetheless hovers perilously around 400, fewer than 100 of which are breeding females. The largest modern threats to this species are ship strikes and fishing-gear entanglement, each of which also makes the whales more susceptible to the other.

In 2014, Defendant National Marine Fisheries Service produced a Biological Opinion finding that, despite its potential to harm the species in unsustainable numbers, the American lobster fishery would not jeopardize the continued existence of the North Atlantic right whale. In so finding, however, the Service failed to include an "incidental take statement" as required under the Act. In response to this suit brought by four conservation groups, the Court now concludes that the agency's reasons for this signal omission are unavailing. It will thus hold the 2014 Biological Opinion to be illegal under the Endangered Species Act and will order briefing as to further remedies.

I. Background

The Court begins by laying out the statutory framework of the ESA, the Marine Mammal Protection Act, and the Administrative Procedure Act before proceeding to the factual and procedural background. Plaintiffs' Complaint, as will be explained in more detail shortly, cites the ESA and APA for Count I, the ESA alone for Counts II and III, and the MMPA and APA for Count IV.

A. Statutory Framework

1. *Endangered Species Act*: Congress enacted the ESA in 1973 "to halt and reverse the trend toward species extinction, whatever the cost." Nat'l Ass'n of Home Builders v. U.S. Fish and Wildlife Serv., 786 F.3d 1050, 1052 (D.C. Cir. 2015) (quoting Tenn. Valley Auth. v. Hill, 437 U.S. 153, 184 (1978)). The Act "constitutes 'the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.'" Ctr. for Biological Diversity v. EPA, 861 F.3d 174, 177 (D.C. Cir. 2017) (quoting Tenn. Valley Auth., 437 U.S. at 180). To enforce its various provisions, the ESA contains a citizen-suit provision "of remarkable breadth." Bennett v. Spear, 520 U.S. 154, 164 (1997). It authorizes "any person…to enjoin any person, including the United States and any other governmental instrumentality or agency[,]…who is alleged to be in violation of any provision of [the ESA] or regulation issued under the authority thereof." 16 U.S.C. § 1540(g)(1)(A). It is under this provision that Plaintiffs in this case bring their first three claims. See ECF No. 1 (Complaint), 117–34 (Counts I–III).

Of the various substantive provisions of the Act, the most relevant here is § 7(a)(2), which requires that "[e]ach Federal agency . . . insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species." 16 U.S.C. § 1536(a)(2). To achieve this end, the accompanying regulations specify that "[e]ach Federal agency shall review its actions at the earliest possible time to determine whether any action may affect listed species." 50 C.F.R. § 402.14(a). If this preliminary "may affect" threshold is met, the agency (called the "action agency") must engage in consultation with an "expert agency." Id.; Conservation Law Found. v. Ross, 2019 WL 5549814, at *2 (D.D.C. Oct. 28, 2019). In this case, the "action agency" was NMFS's Sustainable Fisheries Division (SFD), and the "expert agency" was its Protected Resources Division (PRD).

The ESA regulations have created a few escape hatches allowing agencies, in a limited number of circumstances, to bypass this consultation requirement and instead engage in
"informal consultation." See 50 C.F.R. § 402.14(b). The parties in this case, however, do not

dispute that SFD was required to engage in "formal consultation" — that is, the full consultation process contemplated by the Act.

Broadly speaking, the object of consultation under the statute is for the expert agency to determine whether the project will violate § 7(a)(2)'s prohibition on jeopardizing the continued existence of endangered and threatened species. The "formal consultation" process laid out by the accompanying regulations, see generally 50 C.F.R. § 402.14(g), ultimately results in a "biological opinion." Id. § 402.14(e). The BiOp can either find that the action does violate § 7(a)(2) — "a 'jeopardy' biological opinion" — or that it does not — "a 'no jeopardy' biological opinion." Id. § 402.14(h)(1). In the case of a "jeopardy" BiOp, if the expert agency "indicate[s] that to the best of its knowledge there are no reasonable and prudent alternatives" that would avoid jeopardizing the species, id. § 402.14(h)(2), the action stands in violation of § 7(a)(2) and cannot go forward. See 16 U.S.C. § 1536(a)(2); Tenn. Valley Auth., 437 U.S. at 172–74.

Where a "no jeopardy" BiOp issues — or where reasonable and prudent alternatives to the action exist — the Act then requires the project to meet several requirements regarding its potential to "take" the species. The Act defines "[t]he term 'take'" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19); see also 50 C.F.R. § 222.102 (expanding that definition to include "significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering"). The statutory requirements regarding "take" are as follows: If after consultation under subsection (a)(2), the Secretary concludes that — (A) the agency action will not violate such subsection [*i.e.*, through a no-jeopardy BiOp], or offers reasonable and prudent alternatives which the Secretary believes would not violate such subsection [*i.e.*, through a jeopardy BiOp finding such alternatives]; (B) the taking of an endangered species or a threatened species incidental to the agency action will not violate such subsection; and (C) if an endangered species or threatened species of a marine mammal is involved, the taking is authorized pursuant to section 1371(a)(5) of [the MMPA, discussed below]; the Secretary shall provide the Federal agency and the applicant concerned, if any, with a written statement that — (i) specifies the impact of such incidental taking on the species, (ii) specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact, (iii) in the case of marine mammals, specifies those measures that are necessary to comply with section 1371(a)(5) of [the MMPA] with regard to such taking, and (iv) sets forth the terms and conditions (including, but not limited to, reporting requirements) that must be complied with by the Federal agency or applicant (if any), or both, to implement the measures specified under clauses (ii) and (iii). 16 U.S.C. § 1536(b)(4). Subsections (i) through (iv) thus lay out the substantive requirements for this "written statement," called an "incidental take statement" by the regulations. See 50 C.F.R. § 402.14(i). The content of an ITS is further dictated by regulation. See 50 C.F.R. § 402.14(i). Importantly, the regulations also make clear that an ITS must be produced whenever "[incidental] take is reasonably certain to occur." 50 C.F.R. § 402.14(g)(7).

Subsections (A) through (C), conversely, lay out the prerequisites the agency must satisfy before even being permitted to produce an ITS and proceed with the project: (1) the project must not threaten the continued existence of the listed species; (2) any incidental take from the project must not threaten the continued existence of the species; and (3) any incidental take from the project must not violate § 101(a)(5) of the Marine Mammal Protection Act, discussed below, which requires that there be no more than a negligible impact on the species. See 16 U.S.C.
§§ 1536(b)(4)(A)–(C), 1371(a)(5); see also 50 C.F.R. § 402.14(i)(1) ("In those cases where the [expert agency] concludes that an action (or the implementation of any reasonable and prudent alternatives) and the resultant incidental take of listed species will not violate section 7(a)(2) and, in the case of marine mammals, where the taking is authorized pursuant to section 101(a)(5) of the Marine Mammal Protection Act of 1972, [it] will provide with the biological opinion a statement concerning incidental take…") (emphasis added).

In sum: if take is reasonably certain, there must be an incidental-take statement, and that ITS must confirm that any take complies with both the ESA and the MMPA. The absence of an ITS is at the crux of this case.

2. *Marine Mammal Protection Act*: Plaintiffs' fourth cause of action falls under the Marine Mammal Protection Act. See Compl., ¶¶ 135–39. Congress enacted the MMPA in 1972, see 86 Stat. 1027, in acknowledgment of the "great international significance" of marine mammals and its finding "that they should be protected and encouraged to develop to the greatest extent feasible." 16 U.S.C. § 1361(6). In order to counteract "man's activities" that placed marine mammals "in danger of extinction or depletion," id. § 1361(1), the Act's stated aim is to keep all marine mammal populations at or above their "optimum sustainable population." Id. § 1361(2). To achieve that goal, the MMPA "generally prohibits any individual from 'taking' a marine mammal." Winter v. NRDC, 555 U.S. 7, 15 (2008) (quoting 16 U.S.C. § 1372(a)). The MMPA defines "take" similarly to the ESA, stating that the term "means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." 16 U.S.C. § 1362(13); see also 50 C.F.R. § 216.3 (elaborating that "[t]ake" includes "the restraint or detention of a marine mammal, no matter how temporary," as well as "the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal"). While the Act places a broad "moratorium on the taking and importation" of all marine mammals, see 16 U.S.C. § 1371(a), it also contains "several enumerated exceptions." *In re* Polar Bear Endangered Species Act Listing and Section 4(d) Rule Litig., 720

Commercial Fishing News

From the Director of D.E.L.A.

From the Director -

How is everyone doing these days? I hope that you are all safe and staying healthy during this Covid-19 quarantine. This is probably one of my more difficult reports to write, as we all have been in quarantine and all of our meetings and functions have been cancelled with the exception of Zoom, Facetime or other forms of telecommunications. I guess that's when the cyberspace comes in handy, until we faced this last storm that took out power and satellite towers…which has been a big challenge! We have been stuck in since last Thursday because we have a tree on our power line and it is across our driveway, so we're waiting for CMP to come and clear it for us. I'm just hoping and praying that I can complete my reports before the power is off again. They're talking Southeast winds around 50-60 mph for tonight. I really feel for the linemen that are working around the clock to restore some sanity to this situation that we're all in. I'd also like to thank them for all that they are doing.

While expressing thank you to first responders, I'd also like to thank all of the doctors, nurses, postal workers, and folks that are in the direct public eye. They are much closer to the virus than some of us and are very brave for their services. I keep hearing that "this too shall pass," I sure hope so and that it's soon.

DELA has still been very active with communications in the fishing industry. The Commissioner has had weekly teleconferences concerning the well-being of all of us. We have joined together with all of the Lobster Associations, Dealers and State Representatives. We want to rest assure you that this has been a positive union of delegates from each sector of our industry. I feel that with all that is going on, even with the latest news about the Judge ruling that NOAA didn't follow the whale rules to their liking, we are doing the best that we can. The decision finds that NOAA's Biological opinion violated the Endangered Species Act and is therefore invalid. In the Commissioner's statement about this, he also stated that Gov. Mills is also disappointed with the court's decision and they are reviewing to determine what this means for Maine's lobster industry and what steps that Maine can take. "To be clear, the Judges's decision does not impact the ability to fish at this time - Maine's lobster fishery remains open.

As we receive news about updates on our lobster fishery, we will keep you informed. In many ways, even though we are in this hardship and quarantine, we should still move forward and be ready for our season. The question was asked at our teleconference if this changes the whale marking preparations, and the answer was "No" we still need to continue with our preparations for marking and plans to set gear, but to do it accordingly with the way the market is moving. If the dealers can't move the volume, it is best not to get close to the glut that we had in 2012. This would not be good for any of us, dealers or harvesters.

Harvesters can legally sell their own lobsters, but we cannot buy from others to sell the product. This crosses a fine line with needing a dealer's license. If we sell our own product, we also do not want to "low ball" our prices either. Please, help all of us to keep the value of our product where it needs to be. If you have any questions, please contact Marianne LaCroix of the Maine Lobster Marketing Collaborative (MLMC). We want to all work together with this, and we will get through it wisely and survive this storm just the same as all of the other storms that we have survived in the past.

There are also funding opportunities to help us along the way. These opportunities are best researched on the State of Maine DMR website. They are still a work in progress and will be available to all of us as soon as there is more information in place. Senator Collins, Senator King, Representative Golden have all been a part of the help that we have been receiving. Senator King gave me a call, personally and asked us to let him know what he can do to help. We had a good conversation about the lobster industry and I am confident that all of these representatives are working on this diligently.

DELA also offers our condolences to the Family of Ordman Alley, who recently passed away. Ordie was well loved and a long time member of DELA. He will be greatly missed and has left a life long legacy in Downeast Maine.

May you all stay safe and well, Sheila

A Smooth Sea Never Made a Skilled Sailor

Quote: Franklin D. Roosevelt 1882-1945

By Sheila Dassatt

Somehow I feel that we are in the "Perfect Storm" in more ways than one! I hope this finds everyone safe and well from the Covid-19 quarantine. I don't know how long we will all be able to withstand this isolation from family, friends and work. I really missed being with everyone over Easter along with the Family Dinner, the Easter Service and the togetherness. Just came through four days of a winter storm with tree branches falling on our house and on our power lines and no power for days. This was a true test for our endurance for sure! Thank you to all of the linemen that got us through and restored our power. They cut the tree that fell on our power lines that kept us from leaving for all of this time. We actually had Cathy and Glenn picking up our meds and food supplies and delivering them to us at the end of our driveway. Mike walked out to the end in the wind and pouring rain. Thank you, Dear Family for your help and rescue!

This is just our story. I'm sure that everyone has a story to tell during this tumultuous time that we are all in. I chose the quote: "A Smooth Sea Never Made A Skilled Sailor," by Franklin D. Roosevelt, our 32nd President of the United States because to be honest, I have a quote come in every day on my phone for inspiration. When I looked at today's quote, I was looking for some inspiration and found it. I think this is perfect for all that we are going through.

We have had a lot of communication with our Commissioner, Lobster Associations, Lobster Dealers and State Representatives all concerned with wanting the best for our industry. Primarily, our biggest concern was dealing with the Protection of the Right Whales and how we can all work together to keep them from harm. As you know, there have been countless meetings with this protection in mind. We are marking Maine's gear with purple markings, which in theory, if a whale is entangled with any purple rope, it would mean that it was entangled in Maine waters. This is a lot of extra cost and labor to the fishermen. Mike and I made a protocol of the easiest way possible to make this transition fairly painless. He spliced purple sink rope, tested it in the water, had a meeting with our local Marine Patrol Officer and local fishermen to see what they thought of it. We then took it to our DELA meeting to show the Commissioner to get his approval. This has all taken a lot of time and effort, but it has all made the transition fairly easy. We are always happy to help with any questions that come up about attaching the rope ends to the buoy and lines.

Now, with all of these things happening, a D.C. District Court Judge, James Broasberg has ruled against NOAA in a lawsuit regarding right whales brought by a group of environmental organizations. The decision finds that NOAA's 2014 Biological Opinion violated the Endangered Species Act and is therefore invalid. It is hard to predict how lawsuits will impact future whale rules. At this time, the impact is unknown. Our Governor as well as our Commissioner and the Leaders in the Industry are all working on determining what steps Maine can take. The Judge's decision does not impact us at this time. **Maine's Lobster Industry Remains Open.**

Ok, this goes back to my chosen title for this article. We have been through rough waters before, and this is not our first rodeo. We will survive this "storm" that we are all in and come out of it a little stronger, a little wiser and hopefully, a little kinder to our fellow man. I remember heading out for Stonington in our little wooden lobster boat, Anna Marie. We checked the weather, all was fine…..thought we'd take a nice ride down through from Belfast that evening. Our goal was to head to Billings Diesel to lay over for the Stonington Lobster Boat Races. Turned out to be one trip that I will never forget!

After we passed Turtle Head, the wind turned and it became literally "wild." We had white water spraying over the windshield and I swear, the hull lifted right out of the water and slammed down, hoping that the wooden planks would stay in place. I said to Mike, "we have to turn back!" He said, "We can't, if I try to turn her around, she won't make it, she'll roll." So I hung on for Dear Life, and we kept heading for Stonington. I radioed ahead to let my folks know that we're on our way, but it's rough going. We passed by Eagle Island, and it seemed all of a sudden, the seas died down, the sun came out and it was beautiful. We went on to

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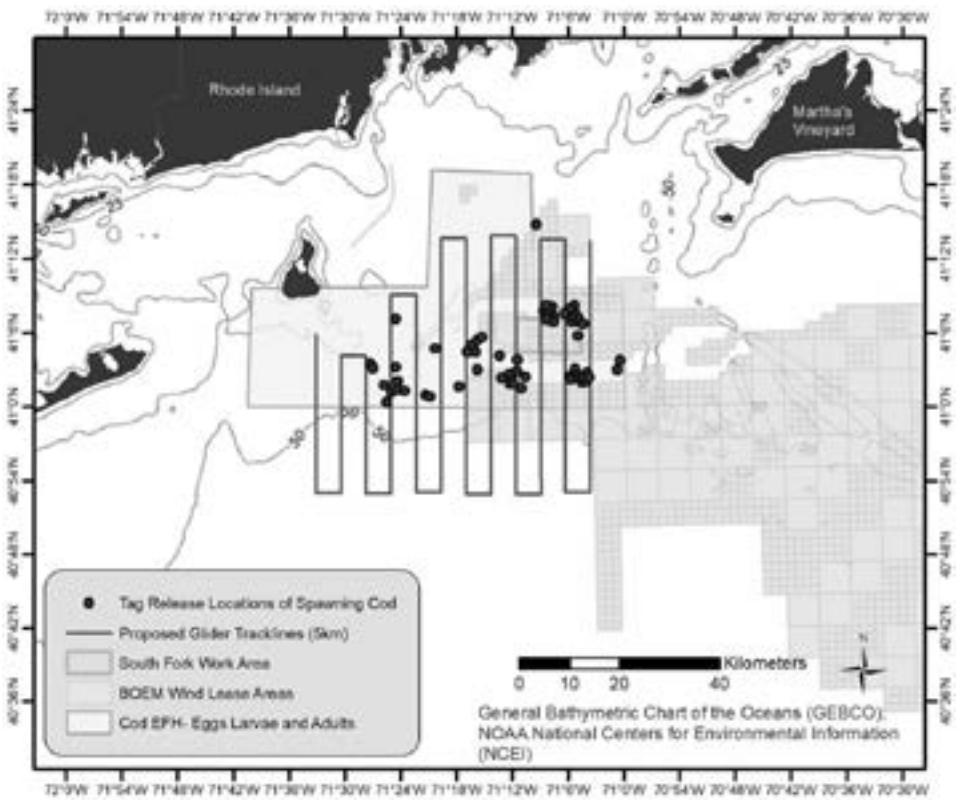
Commercial Fishing News

Miscellaneous Commercial Fishing News



Study area on the southern New England continental shelf, with a focus on Block island Sound and Cox Ledge. The orange polygon is the South Fork wind lease area. Spawning cod have been captured in this area between December and March on previous tagging trips.

Scientists Collecting Data on Commercial Fish Species in Wind Energy Lease Areas

NOAA Fisheries scientists and colleagues have started a three-year study of Atlantic cod and other commercial fish species in Southern New England. Their goal is to gather baseline data to address how offshore wind development in the region could affect these animals.

An autonomous underwater glider is surveying areas in and around Cox's Ledge. This includes the South Fork wind energy lease area south of Rhode Island and Massachusetts. The glider has a hydrophone to detect fish spawning sounds and an acoustic telemetry receiver to detect tagged fish. The receiver will identify location and seasonal occurrence of hotspots for key commercial and federally listed fish species.

According to project lead Sofie Van Parijs, there is little information on Atlantic cod spawning specific to Southern New England waters. Cod elsewhere are known to form large, dense spawning aggregations in predictable locations relatively close to shore, where they can be vulnerable to disturbance that might affect spawning success. Van Parijs also heads the Passive Acoustics Research Group at the Northeast Fisheries Science Center laboratory in Woods Hole, Massachusetts.

"Biological sampling will determine the population's onset of spawning and track growth, maturity, age structure, and other life history parameters," Van Parijs said. "This information will help inform the starting date for our glider surveys each year. We will tentatively conduct these surveys from December through March this year and for longer periods in the subsequent two years."

Researchers will tag up to 100 spawning cod with acoustic transmitters that the glider can detect to identify areas where spawning is occurring. Sensors on the glider will also collect detailed environmental data to better understand the temperature preferences and habitat use of Atlantic cod off Southern New England.

A glider deployed in late December 2019 has been at sea for 3 months, surveying the area three times, detecting whale vocalizations and fish carrying acoustic tags. Denmark's Ørsted power company will use glider detection of endangered whales to help with their monitoring and mitigation requirements in the South Fork wind energy lease area. They expect to begin construction of the wind farm as early as 2021.

A new near real-time telemetry system is operating, detecting whales and fish. View the information.

Researchers are using local vessels to conduct the field work for this project. They have deployed an array of 10 bottom-mounted acoustic telemetry receivers in and around the South Fork wind lease area. This array tracks movements and residency patterns of spawning cod, and will be expanded in the future.

The Bureau of Ocean Energy Management funds the project. Participating organizations include: NOAA Fisheries Northeast Fisheries Science Center; Woods Hole Oceanographic Institution; Massachusetts Department of Marine Fisheries; The Nature Conservancy; University of Massachusetts Dartmouth School for Marine Science & Technology; NOAA's Greater Atlantic Regional Fisheries Office; and Rutgers University.

New State of the Ecosystem Reports Document "Big Picture" Around Fishing

The Northeast U.S. Shelf is one of the most productive marine ecosystems in the world. According to new reports, climate change, coastal and ocean processes, and human uses affect ecosystem productivity but also fishing communities and regional economies.

Two newly issued reports provide a snapshot of the Northeast U.S. Shelf Ecosystem. They look at everything from phytoplankton production at the bottom of the food web to the fishery harvests at the top. One report focuses on Georges Bank and the Gulf of Maine the other on the waters of the Mid-Atlantic Bight. These are the three major regions within the Northeast U.S. Continental Shelf Large Marine Ecosystem.

These annual reports are part of a larger, ongoing NOAA-wide initiative. It provides a consistent national approach to managing ecosystems that is flexible enough to accommodate regional needs. This Integrated Ecosystem Assessment approach is intended to help resource managers integrate physical, biological, economic, and social components of ecosystems into their decision-making. This will help them to balance trade-offs and determine which approaches are more likely to achieve their desired goals. The 2020 State of the Ecosystem Reports inform the New England and the Mid-Atlantic Fishery Management Councils.

The State of the Ecosystem reports were produced by the Northeast Fisheries Science Center, with additional collaborators from academic research institutions, non-profit organizations, and state agencies.

For each region, the researchers organized information around management objectives — such as seafood production, stability, recreation, and ecosystem structure. They used indicators related to those objectives — including commercial and recreational landings, revenue, and diversity of fisheries and species. They will use those indicators to report on economic and social factors, protected species, fish and invertebrates, habitat quality, and ecosystem productivity.

Fisheries remove a proportion of the total energy available to the ecosystem (this is called primary production). Since 2000, the proportion of energy removed by fisheries has been declining. In the Mid-Atlantic, commercial landings have declined while primary production has remained steady. In New England, commercial landings have been steady while primary production has increased slightly.

Engagement in commercial fishing has been declining since 2004 for medium to highly engaged Mid-Atlantic fishing communities. It has been increasing in New England for moderately engaged fishing communities.

In New England, two single-species commercial fisheries — Gulf of Maine lobster and Georges Bank scallops — account for a majority of catch and revenue. Relying on single-species fisheries can be a risk to fishing communities if these populations decline.

Fish habitat modeling indicates which species are most likely to be found in current and proposed wind energy lease areas. For Mid-Atlantic managed species, summer flounder, butterfish, longfin squid, and spiny dogfish top the list. For New England managed species, Atlantic herring, little skate, winter skate, windowpane flounder, and winter flounder rank highest.

Over the last decade, marine heatwaves—periodsofprolongedabove-average water temperatures — have increased in intensity and duration throughout the region. Temperatures at the bottom of the ocean are also warming.

Coastal habitats are under stress in the Mid-Atlantic. Heavy rains in 2018-2019 degraded Chesapeake Bay water quality,

Miscellaneous Commercial Fishing News

increasing oyster mortality and spreading invasive catfish. Sea-level rise is also altering coastal habitats, driving declines in nesting seabirds on Virginia islands.

The Gulf Stream is shifting northward and is increasingly unstable, producing more warm core rings. These smaller-scale eddies break off from larger ocean currents, rotate clockwise in a ring, and circulate warm Gulf Stream water within the Northeast Shelf Ecosystem. The result is a higher likelihood of warm salty water and the appearance of associated oceanic species such as shortfin squid on the shelf.

During the last three years, the source waters flowing into the Gulf of Maine have been dominated by warm offshore waters associated with the Gulf Stream. In comparison to the past, almost no cold waters originating from the Labrador Current have entered the Gulf of Maine. The changing proportions of source water affect the temperature, salinity and nutrient inputs to the Gulf.

The reports note that changes in phytoplankton and zooplankton affect the food web. They may be related to observed changes in fish condition, recruitment patterns, and forage fish energy content. These changes, along with changing human uses, are affecting ecosystem productivity, fishing communities, and regional economies. To directly link these observations will require more work. However, the researchers say predicting how the ecosystem will respond to changes in climate and fishing patterns ultimately depends on understanding these connections.

Industry-funded Monitoring in the Atlantic Herring Fishery

The Atlantic herring fishery has new at-sea monitoring coverage requirements for certain vessels that use midwater trawl, bottom trawl, or purse seine gear.

Industry-Funded Monitoring establishes a 50 percent monitoring coverage target for at-sea monitoring aboard vessels with Category A or B herring permits using midwater trawl, bottom trawl, or purse seine gear on declared herring trips. Coverage target is achieved using the Standardized Bycatch Reporting Method of the Northeast Fisheries Observer Program plus IFM coverage.

Overall, our goal is to provide increased accuracy in catch estimates. Specific goals include: Accurate estimates of catch (retained and discarded). Accurate catch estimates for incidental species with catch caps (haddock and river herring/shad). Affordable monitoring for the herring fishery.

Species affected by the IFM are Atlantic herring, American shad, blueback herring, haddock, and alewife.

Vessels with a limited access (A, B, C) or open access E herring permit sailing on a declared herring or herring carrier trip must use the new notification system to be considered for Standardized Bycatch Reporting Method or IFM coverage. Vessels issued an open access D herring permit using midwater trawl gear on a declared herring trip in herring management areas 1A, 1B, or 3 must also notify.

If selected for IFM coverage, owners of vessels with A or B herring permits would be responsible for covering costs associated with those trips.

Waivers could be requested for certain trips, including wing vessel trips that do not carry any fish and trips that land less than 50 mt of herring.

Midwater trawl vessels could choose either at-sea monitoring or electronic monitoring with portside sampling to meet IFM requirements. They could also request to purchase observer coverage to fish in Groundfish Closed Areas.

Maine DMR News

Preliminary 2020 Elver Landings Report Through 6pm April 10, 2020

The following represent preliminary totals for Maine's 2020 elver harvesting season through 6 pm April 10, 2020. These data will be updated throughout the season.

DMR

Pounds Reported - 1,704.06; Overall Quota - 7,566; Remaining Quota - 5,861.94

MALISEET

Pounds Reported – CONFIDENTIAL; Overall Quota – 107; Remaining Quota -

MICMAC

Pounds Reported – CONFIDENTIAL; Overall Quota – 39; Remaining Quota -

PASSAMAQUODDY

Pounds Reported - 1,108.64; Overall Quota - 1,356; Remaining Quota - 247.36

PENOBSCOT

Pounds Reported - 87.86; Overall Quota - 620.0; Remaining Quota - 532.14

QUOTA TOTAL*

Pounds Reported - 2,900.556

*All 2020 data are preliminary and subject to change without notice.

Dealers reported buying a total of 2,900.556 pounds with a reported value of $1,476,966.00 for average price per pound of $509.

National Science Foundation Research Grant to Study Impacts of Climate Change on Lobsters

The University of New England will share an $860,000 grant from the National Science Foundation (NSF) with Hood College in Maryland, Bigelow Laboratory for Ocean Sciences, and the Maine Department of Marine Resources to study the impact that a warming Gulf of Maine is having on lobster larvae and their success in growing to adulthood.

"We'll be studying how temperature influences how larvae settle, where they settle, and how successfully they settle," explained Markus Frederich, Ph.D., professor in the School of Marine Programs and lead scientist for UNEs part of the project. The findings of this project will help us make more specific predictions of how many lobsters there will be in the Gulf of Maine in the future.

Before a lobster becomes an adult, it starts as larvae. They float in the water and then settle and grow into adults. Temperature is a critical factor controlling the distribution of marine organisms. As waters warm, adult lobsters move towards colder waters. However, most research on thermal tolerance has focused on adults, not larvae.

There is very little research available on the impact of warming oceans on the development of those larvae, said Frederich.

Research conducted by the team will help advance our understanding of shifting species distributions in response to increasing ocean temperatures, explore thermal sensitivity in wild caught larvae for the first time, and improve our understanding of the potential impact of climate change on the most valuable commercial fishery in North America.

The project will support training of undergraduate interns and masters students, with a team of scientists that are experts in lobster biology, stress physiology, and modeling.

This is a fantastic opportunity for our

Continued on Page 15.

Judge Boasberg's Decision Against NOAA and Lobster Fishing

F.3d 354, 357 (D.C. Cir. 2013). One of these allows incidental takings by certain commercial fishing operations should they be approved by NMFS in compliance with the MMPA and its regulations. See 16 U.S.C. § 1371(a)(1). If NMFS determines, "after notice and opportunity for public comment," that "the incidental mortality and serious injury from commercial fisheries will have a negligible impact on such species or stock" and that the species is subject to recovery and monitoring plans, it must allow incidental take by such fisheries. Id. § 1371(a)(5)(E)(i) (emphasis added). NMFS must post a list of the fisheries permitted under these requirements, and any fishery not on the list that does "take" the marine mammal is subject to penalties. Id. §§ 1371(a)(5)(E)(i), 1387(h). As noted above, compliance with this section of the MMPA is also required by the ESA. Id. § 1536(b)(4)(C).

3. *Administrative Procedure Act*: The Administrative Procedure Act, passed in 1946, "sets forth the full extent of judicial authority to review executive agency action for procedural correctness." FCC v. Fox Television Stations, Inc., 556 U.S. 502, 513 (2009) (citing Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 545–49 (1978)). It subjects to judicial review "final agency action for which there is no other adequate remedy in a court." 5 U.S.C. § 704. The statute also sets out the standard for such review, requiring courts to "hold unlawful and set aside agency action, findings, and conclusions" that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). While Plaintiffs' first claim purports to "lie both under the ESA and the APA, . . . the APA by its terms independently authorizes review only when 'there is no other adequate remedy in a court.'" Bennett, 520 U.S. at 161–62 (quoting 5 U.S.C. § 704); see also Conservation Force v. Salazar, 715 F. Supp. 2d 99, 104 n.6 (D.D.C. 2010) ("[T]he APA permits courts to review 'final agency action for which there is no other adequate remedy in a court.'" Here, the ESA's citizen-suit provision provides an adequate remedy.") (citation omitted) (quoting 5 U.S.C. § 704). The Court will thus treat this first count as arising under only the ESA. Confusingly, however, while the APA does not provide a cause of action for ESA claims, it does provide the standard of review. Nat'l Ass'n of Home Builders v. Norton, 415 F.3d 8, 13 (D.C. Cir. 2005); see also Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson, 685 F.2d 678, 685 (D.C. Cir. 1982) ("Since the ESA does not specify a standard of review, judicial review is governed by section 706 of the [APA]."). For all three ESA claims, consequently, "[w]hile the subject of review is whether NMFS has violated the ESA, the standard of review is thus found in APA precedent." CLF, 2019 WL 5549814, at *10. This standard will be laid out in a future section. See *infra* Section II. Plaintiffs' fourth claim, on the other hand, is properly pled as arising under the APA, since the MMPA, unlike the ESA, does not have a citizen-suit provision. See 16 U.S.C. §§ 1371, 1387; accord NRDC v. Evans, 279 F. Supp. 2d 1129, 1142 (N.D. Cal. 2003) ("Citizens challenging actions done under the MMPA must sue under the APA."); Didrickson v. U.S. Dep't of Interior, 982 F.2d 1332, 1338 (9th Cir. 1992) (noting "that the MMPA does not provide for citizen enforcement of the Act"). While all four claims must thus be reviewed under the APA standard of review, only the last of them properly derives its cause of action from that statute.

B. Factual History

Lest this Opinion get too dry, let us head back out to sea. NMFS supervises multiple fisheries along the continental coastline. This case concerns the American lobster fishery, which consists of seven areas spanning the East Coast from Maine to North Carolina, American Lobster, NOAA Fisheries (last visited Apr. 8, 2020), https://www.fisheries.noaa.gov/species/ American-lobster, and most abundantly between Maine and New Jersey. See C1 26727. It is "one of the most valuable fisheries along the Atlantic coast," raking in hundreds of millions of dollars and lobsters every year. American Lobster, Atlantic States Marine Fisheries Commission (last visited Apr. 8, 2020), http://www.asmfc.org/species/american-lobster. The fishery is managed pursuant to a Fishery Management Plan (FMP) created by the New England Fishery Management Council, one of eight regional councils created by the Magnuson-Stevens Act and managed by NMFS. Oceana, Inc. v. Pritzker, 26 F. Supp. 3d 33, 36–37 (D.D.C. 2014).

The North Atlantic right whale, which has "been listed as endangered under the [ESA] since its passage in 1973," C1 6807, "is one of the world's most endangered large whale species, with only about 400 whales remaining." North Atlantic Right Whale, NOAA Fisheries (last visited Apr. 8, 2020), https://www.fisheries.noaa.gov/species/north-atlantic-right-whale. This highly migratory species feeds and mates in New England and Canadian waters but may travel as far south as Florida each year to calve. Id. The two largest factors preventing this whale population from recovering to a sustainable level are "vessel collisions and entanglement in fishing gear." C1 6807.

Fishing gear with a vertical line poses an especially grave danger to the species, since such gear has ropes stretching from the surface to the ocean floor into which the whales may swim and become entangled. See C1 26781. Two types of vertical-line gear are lobster pot/trap gear and gillnets used to fish non-crustaceans. This Court previously invalidated NMFS's opening of a large area to gillnet fishing. CLF, 2019 WL 5549814, at *14–16. In that litigation, the Service's own expert claimed that "[t]he risk of entanglement mortality to right whales is much higher in trap/pot gear, particularly lobster gear, because lobster fishing accounts for over 97% of the vertical lines on the east coast." Conservation Law Found. v. Ross, No. 18-1087, ECF No. 40-4 (Declaration of Michael Asaro), ¶ 7; see CLF, 2019 WL 5549814, at *15 (quoting same). "Pot/trap gear," the type used in the American lobster fishery, "is known to entangle ESA-listed cetaceans" such as the North Atlantic right whale, "with some events resulting in injuries and death." C1 26726. It has "been identified as a gear type causing injuries and mortality of right, humpback, and fin whales." Id. On July 31, 2014, NMFS issued its newest Biological Opinion for the American lobster fishery, see C1 26652–28422 (2014 BiOp), finding that the fishery "may adversely affect, but is not likely to jeopardize, the continued existence of North Atlantic right whales." C1 26811. As to incidental take, Defendants mince no words: "NMFS anticipated take would occur as the result of the action, but did not include an ITS in the 2014 BiOp." ECF No. 81 (Defs. Opp. and Cross-Motion for SJ) at 17. Specifically, the 2014 BiOp found that "the lobster fishery ha[d] the potential to seriously injure or kill an average of 3.25 right whales per year." C1 26787. The BiOp arrived at this number because 3.25 had been "the average reported mortality or serious injury to right whales due to fishery entanglement from U.S. gear" each year "[f]rom 2007 to 2011." C1 26786. The figure was well over the whale's "potential biological removal level" — that is, "the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population." 50 C.F.R. § 229.2; see C1 26796 (2014 BiOp reciting same definition). The PBR for North Atlantic right whales, in fact, "is 0.9 whales." C1 26796; see C1 26686 (same).

Despite finding that the American lobster fishery had the potential to "take" North Atlantic right whales within the meaning of the ESA, the 2014 BiOp explained that it did "not includ[e] an incidental take authorization for right . . . whales in connection with this biological opinion because (1) an incidental take statement cannot be lawfully issued under the ESA for a marine mammal unless incidental take authorization exists for that marine mammal under the MMPA and (2) the incidental take of ESA-listed whales by the American lobster fishery has not been authorized under section 101(a)(5) of the MMPA." C1 26812 (citation omitted) (citing 16 U.S.C. § 1536(b)(4)(C)). Because of this, "no incidental take by the American lobster fishery is authorized under the ESA." Id. Instead of an ITS, NMFS "included numerical 'triggers' for reinitation of ESA section 7 consultation." Id. For right whales, this number was an annual average of 3.25 incidents of serious injury or mortality within a five-year period. Id. "[I]f the average number of serious injuries or mortalities were to occur for the whale species at a number ≤ the species' trigger, it would not likely reduce appreciably the likelihood of both survival and recovery of the whale species." Id.

NMFS concluded by "recogniz[ing] that further efforts among stakeholders are necessary to reduce interactions between authorized federal fisheries and right, humpback, fin, and sei whales in order to achieve the MMPA's goal of insignificant levels of incidental mortality and serious injury of marine mammals . . . ." C1 28422. And

Continued on Page 20.

A Smooth Sea Never Made a Skilled Sailor

Continued from Page 11.

Stonington, we were soaked with salt water dripping from our noses and it never looked so good to me! I learned a lot that day about the sea and the unpredictable weather. That was also when I felt that the ocean is so large and our boat is so small. Through it all, we never forgot that trip! Just to put the frosting on the cake, when we headed home from that trip, we hand thunder and lightning all the way. It just seems that some of these trips that we make can be totally unpredictable. We just needed to continue to point the bow toward home and totally keep the faith.

I know that all of us have similar stories to tell about these rough trips on the water. Actually, the more of these storms that we have gotten through, the wiser we become. I'd love to hear some of your stories as well. If you ever feel inspired, send me your story via the mail or my email, dassatt711@yahoo.com. We'll share them. We need to have some true survival stories, they are an inspiration to all of us. With all that is going on in the world right now, we will lead by example and we will survive all of these challenges. I will see you on the water this season. "Never give up!"

Maine DMR News

Continued from Page 13.

faculty and our students to study the effects of climate change in the Gulf of Maine on our states most iconic animal, stated Charles Tilburg, Ph.D., director of UNEs School of Marine Programs. Markus and his colleagues work will bring much needed light to this important topic and provide our students with new experiences as they learn cutting edge techniques.

The project brings together two undergraduate colleges, a premier research institution, and a state agency. The combination provides exciting learning opportunities for the students involved.

Well combine field work and lab work, stated Frederich. All of the stages will involve students, giving them hands-on research that could have an impact on an industry and the people involved in it. This is a spectacular science experiment experience for them.

Guidance for Lobster Harvesters Regarding Direct-to-Consumer Sales

Many harvesters are turning to direct-to-consumer sales to help generate some income. Here's some information to help you.

Public health and safety must be maintained at all times: If you or any of your workers are exhibiting any signs/symptoms of illness, they should stay at home. Maintain six-foot social distancing for workers and members of the public at all times. There aren't any exceptions! Ignoring this advice could further the spread of COVID-19 and delay economic recovery.

With regard to direct to consumer sale of lobster by harvesters, you can: Sell lobsters direct to consumers with your Maine harvester license.

Lobstermen cannot: Process lobster and sell the meat at remote locations where you are peddling (parking lot, wharf, etc.) without other licenses.

Other important considerations: Do not under-value your product - Its important to maintain the value consumers have come to expect or it could hurt you in the long run. The Maine Lobster Marketing Collaborative has offered advice on this: https://t.e2ma.net/message/7ju6vf/zdovzcb?fbclid=IwAR0hz-g06rEZLmVa5wrTBE-iL-jLQCKriE91S2Ho9UQKRd6NpBE8M5n-MTaW4

Message from DMR Commissioner Keliher About Recent Court Decision

April 10, 2020

Dear Maine lobster industry member,

It pains me to have to send you this message while you're dealing with the stress and challenges of COVID-19, and its impacts on you, your family, your crews, and your livelihood. By now you have heard that D.C. District Court Judge James Boasberg has ruled against NOAA in a lawsuit regarding right whales, brought by a group of environmental organizations. The decision finds that NOAAs 2014 Biological Opinion violated the Endangered Species Act and is therefore invalid.

In all of the many industry meetings last year we focused on the federal rule making, and on trying to achieve the best outcome for Maine through that process. However, I also described the federal lawsuits as a "wild card", meaning it's hard to predict how lawsuits will impact future whale rules. I am afraid that's the case with this decision right now. Many of you have called or emailed asking about the timing and impacts of this decision. At this time they are still unknown, but may come very quickly.

Governor Mills shares my deep disappointment about the Courts decision, and we are currently reviewing it to determine what this means for Maine's lobster industry and what next steps Maine can take. To be clear, the Judges Decision does not impact your ability to fish at this time - Maine's lobster fishery remains open.

I know you have many questions and want answers, and frankly we are in the same boat. These answers will come in time as we determine what direction the judge will go. All I can ask, as hard as it will be, is to please be patient as we work with our legal team on determining our path forward. I will keep you posted as soon as there are new developments to share.

Again, I know this could not have come at a worse time. Please be safe.

Pat

Patrick Keliher Commissioner Maine Department of Marine Resource

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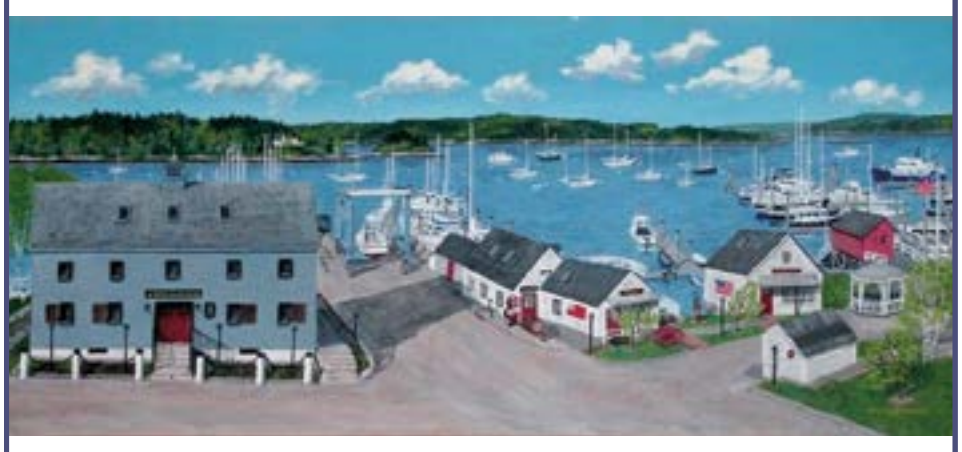

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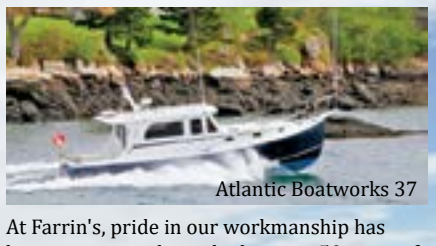

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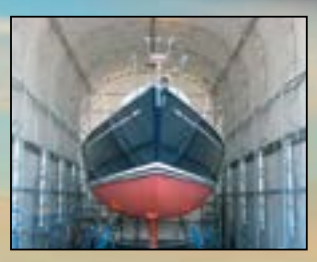

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U. S. Navy News

LOS ANGELES (March 27, 2020) The Military Sealift Command hospital ship USNS Mercy (T-AH 19) arrives in Los Angeles, March 27, 2020. Mercy deployed in support of the nation's COVID-19 response efforts, and will serve as a referral hospital for non-COVID-19 patients currently admitted to shore-based hospitals. This allows shore base hospitals to focus their efforts on COVID-19 cases. One of the Department of Defense's missions is Defense Support of Civil Authorities. DoD is supporting the Federal Emergency Management Agency, the lead federal agency, as well as state, local and public health authorities in helping protect the health and safety of the American people. (U.S. Navy photo by Mass Communication Specialist 1st Class David Mora Jr./Released)

Continued from Page 8.

PASCAGOULA, Mississippi (NNS) -- The future USS Fort Lauderdale (LPD 28) was successfully launched at the Huntington Ingalls Industries (HII) Ingalls Division shipyard in Pascagoula, Mississippi, March 28. Fort Lauderdale is the Navy's 12th San Antonio class amphibious transport dock ship.

On March 7 2020, the ship was transferred from the land level facility to the dry dock in preparation of floating off. During the launch, the dry dock was slowly flooded until the ship floated off the blocks.

"I am thrilled to get Fort Lauderdale in the water, so we can begin final outfitting and eventually take the ship out to sea for trials," said Capt. Scot Searles, LPD 17 class program manager for Program Executive Office (PEO), Ships. "The San Antonio class has proven essential to expeditionary warfighters, and we are eager to deliver another ship to the fleet."

San Antonio class ships support embarking, transporting, and landing elements of 650 Marines by landing craft or air cushion vehicles. The ship's capabilities are further enhanced by its flight deck and hangar, which can operate CH 46 Sea Knight helicopters and the Osprey tilt-rotor aircraft (MV-22). Because of the ship's inherent capabilities, it is able to support a variety of amphibious assault, special operations and expeditionary warfare missions, operating independently or as part of Amphibious Readiness Groups (ARGs), Expeditionary Strike Groups, or Joint Task Forces.

Ingalls Shipbuilding is also in production on the future USS Richard M. McCool (LPD 29) and Harrisburg (LPD 30). LPD 28 and 29 will serve as transition ships to LPD 30, the first LPD 17 Flight II ship.

As one of the Defense Department's largest acquisition organizations, PEO Ships is responsible for executing the development and procurement of all destroyers, amphibious ships, special mission and support ships, and boats and craft.

Comfort Arrives in New York

From U.S. 2nd Fleet Public Affairs

NORFOLK, Virginia (NNS) -- The Military Sealift Command hospital ship USNS Comfort (T-AH 20) arrived in New York March 30, 2020 in support of the nation's COVID-19 response efforts.

While in New York, the ship will serve as a referral hospital for non-COVID-19 patients currently admitted to shore-based hospitals, and will provide a full spectrum of medical care to include general surgeries, critical care and ward care for adults. This will allow local health professionals to focus on treating COVID-19 patients and for shore-based hospitals to use their Intensive Care Units and ventilators for those patients.

Comfort is a seagoing medical treatment facility that currently has more than 1,200 personnel embarked for the New York mission including Navy medical and support staff assembled from 22 commands, as well as over 70 civil service mariners.

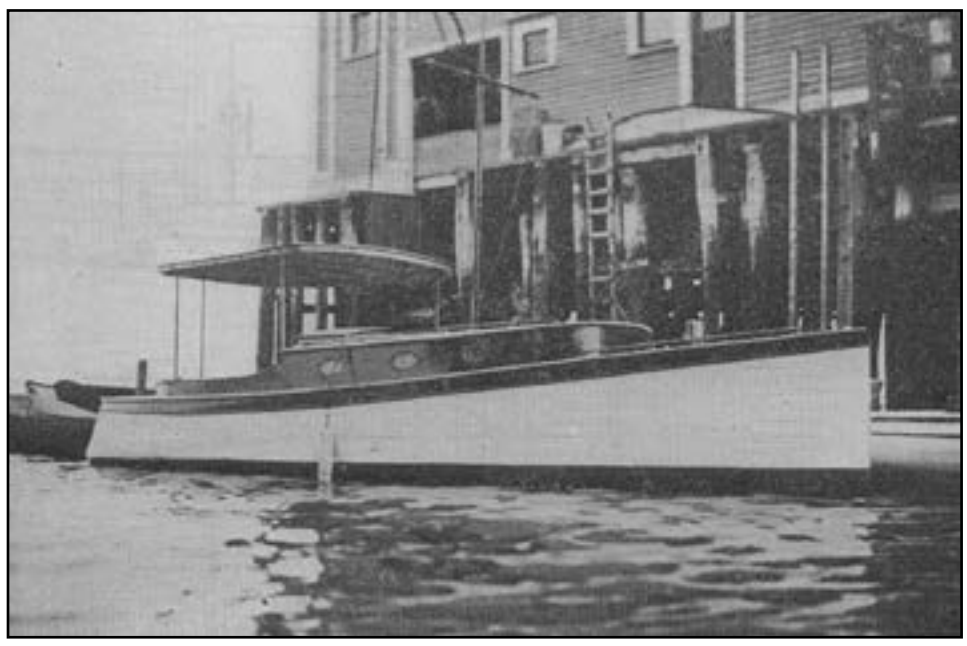
"The USNS Comfort arrives in New York City this morning with more than 1,100 medical personnel who are ready to provide safe, high-quality health care to non-COVID patients," said Capt. Patrick Amersbach, commanding officer of the USNS Comfort Military Treatment Facility. "We are ready and grateful to serve the needs of our nation."

Comfort's primary mission is to provide an afloat, mobile, acute surgical medical facility to the U.S. military that is flexible, capable and uniquely adaptable to support expeditionary warfare. Comfort's secondary mission is to provide full hospital services to support U.S. disaster relief and humanitarian operations worldwide.

"Like her sister ship, USNS Mercy (T-AH 19), which recently moored in Los Angeles, this great ship will support civil authorities by increasing medical capacity and collaboration for medical assistance," said Rear Adm. John Mustin, vice commander, U.S. Fleet Forces Command. "Not treating COVID-19 patients… but by acting as a relief valve for other urgent needs, freeing New York's hospitals and medical professionals to focus on the pandemic."

"This USNS Comfort team of Sailors, Marines and Civilian Mariners came together during the transit to New York City and our medical professionals are ready to begin receiving patients from local hospitals tomorrow," said Capt. Joseph O'Brien, mission commander of Task Force New York City. "Our personnel are our strength—the men and women of our military services accomplish incredible things every day, and I am confident in their abilities as we start

From the 1912 Issue of "Motorboat"

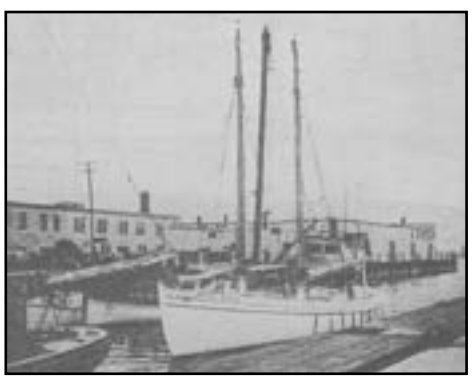


Portland's police boat SARACEN.

Old maritime magazines are very interesting reading. I recently purchased a copy of "Motorboat" from 1912, which I do not think any Museum has a copy of. It covered cruising the Caribbean; how to build the "Snapper;" a review of several cruisers; power boat races and their problems; "The Forum," which deals with numerous topics one might have as an issue with his boat; business news; and my favourite the advertisements.

What really caught my interest was two articles that pertained to the State of Maine. One was on the police boat stationed at Portland named SARACEN. The biggest problem boaters in Portland had at the time was the "harbor thieves" who stole anything that was not nailed down on their boats. The City of Portland wanted a steam driven boat, but they consistently turned down the proposals year after year due to the cost. Finally, they purchased a 30-foot gasoline powered yacht from the Savin Hill Yacht Club in Massachusetts. She was powered with a 4-cylinder Palmer and can push the boat along at 10 mph. Since her arrival at the harbor crime on the water dropped significantly and they also saved a couple of people from drowning and stopped a couple of wharf fires.

The other article was on the 55-foot lobster smack ANNIE LOUISE, owned by N. F. Trefethen & Co. of Portland. She was built at the Adams Shipbuilding Company of East Boothbay in 1912. She was powered with a 28-hp Regal engine, but also has two masts and carries a jib, foresail and a mainsail. She had nice quarters for the crew and a capacity for carrying 7,000 lobsters.



Lobster smack ANNIE LOUISE.

U. S. Navy News

the next phase of this mission."

The ship expects to begin receiving patients 24 hours after arriving in New York City. All patient transfers will be coordinated with local hospitals, thus ensuring a consistent handoff of care between medical providers. Patients will not be accepted on a walk-on basis, and should not come to the pier with any expectation that they can receive care.

"The last time that this great hospital ship was here was in the wake of 9-11, where she served as respite and comfort for our first responders working around the clock," said Mustin. "Our message to New Yorkers – now your Navy has returned, and we are with you, committed in this fight."

The U.S. Coast Guard is providing a security escort of USNS Comfort into New York Harbor, comprised of crews and assets from around the region to include the Coast Guard Cutters Shrike andSitkinak, Maritime Safety and Security Team New York, Coast Guard Station New York, and Coast Guard Air Station Cape Cod.

U.S. 2nd Fleet exercises operational authorities over assigned ships, aircraft, and landing forces on the East Coast and the Atlantic.

PCU Vermont Welcomes New Commanding Officer

By Mass Communication Specialist 2nd Class Alfred A. Coffield, Commander, Submarine Force Atlantic Public Affairs

GROTON, CT (NNS) -- The Virginia-class fast-attack submarine Pre-commissioning Unit (PCU) Vermont conducted a change of command Monday, March 30, at the General Dynamics Electric Boat shipyard in Groton, Connecticut. Cmdr. Chas Phillips relieved Capt. Henry Roenke as commanding officer of PCU Vermont.

Capt. Andrew Miller, commander, Submarine Squadron 4, praised Roenke for his accomplishments as commanding officer while the submarine progressed through construction to sea trials, in anticipation of its commissioning.

"Capt. Roenke expertly prepared the crew for every testing and certification milestone in the new construction and delivery sequence, ensuring the crew was trained and ready to execute at sea," Miller said. "To him and the impressive crew, congratulations on a job well done!"

Roenke said he is thankful to the crew for the enthusiasm and determination they brought to overcoming challenges during the construction and training phase.

"I want to thank everyone for making the biggest and most satisfying professional event of my life possible," he said. "A piece of this crew's spirit will sail with Vermont until she fades from our memories and future Vermont sailors will look back and draw strength from their accomplishments."

His next assignment is at Portsmouth Naval Shipyard in Kittery, Maine, as the shipyard representative.

Phillips said he is excited to prepare PCU Vermont to become a warship and has been immediately impressed with the crew's professionalism and strength.

"I am in awe of their comradery, willingness to learn, ability to work together and hunger to serve in the fleet," he said. "We know that one or two well trained submarines could overwhelm the enemy and end a conflict before it begins. I intend to make sure that Vermont is ready to fight and answer that call."

Phillips began his naval career at the Naval Reserve Officer Training Corps Unit at Cornell University, graduating in 2002. He subsequently earned Master's Degrees in Mechanical Engineering and Applied Mathematics, while also obtaining a Professional Engineer's License in Mechanical Engineering. He previously served as executive officer of USS Hawaii (SSN 776) in the Western Pacific and at the Naval Reactors Line Locker as the Special Assistant to the Deputy Director for Enlisted Plans, Policy, and Training.

Virginia-class submarines are built to dominate the world's littoral and deep waters while conducting anti-submarine warfare; anti-surface-ship warfare; strike warfare; special operations forces support; intelligence, surveillance and reconnaissance; irregular warfare and mine warfare missions. Their inherent stealth, endurance, mobility and firepower directly enable them to support five of the six maritime strategy core capabilities: sea control, power projection, forward presence, maritime security and deterrence.

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"[a]lthough NMFS ha[d] concluded that the American lobster fishery is not likely to jeopardize the continued survival or recovery of right . . . whales for purposes of ESA Section 7, the need for further efforts among stakeholders to reduce whale/fishery interactions and achieve the zero mortality goal of the MMPA is not diminished by this no-jeopardy conclusion." Id.

C. Procedural History

In January 2018, Plaintiffs Center for Biological Diversity, Defenders of Wildlife, and The Humane Society of the United States filed suit in this Court, challenging the 2014 BiOp and subsequent agency action on four grounds. See Compl., 117–39. First, they claimed that the 2014 BiOp was deficient under the ESA for a number of reasons, including for "fail[ing] to include an incidental take statement" and instead including the "numeric trigger," an "unlawful substitute for an incidental take statement." Id., 123–24. Plaintiffs' second allegation is that NMFS violated the ESA by "rely[ing] on this legally invalid opinion to meet its substantive obligations under Section 7(a)(2) of the ESA." Id., 128. Their third claim asserted that the agency was running afoul of an altogether different provision of the ESA, Section 9, which makes it "unlawful for any person subject to the jurisdiction of the United States to . . . cause to be committed," 16 U.S.C. § 1538(g), the "take [of] any [listed] species within the United States or the territorial sea of the United States." Id. § 1538(a)(1)(B); see Compl., 131–34 (so alleging). And finally, Plaintiffs maintained that "NMFS's continued authorization, permitting, and management of the American lobster fishery in absence of an MMPA take authorization" was "not in accordance with the MMPA, in violation of the APA." Compl., ¶ 139 (citing 5 U.S.C. § 706(2)). NMFS, for its part, answered the Complaint but moved to transfer the case to the District of Massachusetts. See ECF Nos. 10, 12. After consolidating the case with one alleging the same four claims and brought by Plaintiff Conservation Law Foundation, see ECF No. 19; see also Conservation Law Found. v. Ross, No. 18-283, ECF No. 1 (Complaint), 118–48, the Court denied the transfer motion, finding this "a case of national, rather than local, importance." Ctr. for Biological Diversity v. Ross (CBD I), 310 F. Supp. 3d 119, 127 (D.D.C. 2018). Shortly thereafter, both the Maine Lobstermen's Association and the Massachusetts Lobstermen's Association successfully moved to intervene as defendants. See ECF Nos. 24, 31 (motions to intervene); Minute Order of June 4, 2018 (granting Maine); Minute Order of Aug. 3, 2018 (granting Massachusetts). Plaintiffs had moved for discovery back in May, and Defendants had opposed. The Court "attempted to assist the parties in reaching a compromise on this issue, but apparently to no avail." Ctr. for Biological Diversity v. Ross (CBD II), 349 F. Supp. 3d 38, 40 (D.D.C. 2018). In October 2018, "forced to address the merits of the discovery dispute," the Court granted discovery on two of Plaintiffs' four counts. Id. The Court then also granted the parties' joint request "that discovery and briefing should both be bifurcated, with the first phase to address liability and a second, future phase to address remedy, if necessary." ECF No. 48 (Joint Mot. to Clarify), ¶ 2; see Minute Order of Nov. 13, 2018.

After discovery closed at the end of May 2019, see Minute Order of Apr. 22, 2019, Plaintiffs filed a motion for summary judgment, and NMFS responded by moving to stay the case. Ctr. for Biological Diversity v. Ross (CBD III), 419 F. Supp. 3d 16, 19 (D.D.C. 2019). This request arose from the agency's "intent to issue, by July 31, 2020, both (1) a new BiOp for the American lobster fishery and (2) a regulation amending the Atlantic Large Whale Take Reduction Plan (TRP)." Id. A TRP is required by a different section of the MMPA not challenged by Plaintiffs in this case. Id. The Court denied the stay, finding the TRP process irrelevant to this case and the new BiOp not at all certain to moot Plaintiffs' claims, particularly in the interim before the BiOp is issued. Id. at 22–23.

With the motion to stay resolved, Defendants filed their Oppositions to Plaintiffs' Motion for Summary Judgment and Cross-Motions for Summary Judgment. Briefing is now complete, and the Court is ready to rule on the Motions.

II. Legal Standard

Upon a party's motion, Federal Rule of Civil Procedure 56(a) requires the Court to "grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." A fact is material if it would change the outcome of the litigation, Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986); Holcomb v. Powell, 433 F.3d 889, 895 (D.C. Cir. 2006), and a dispute is genuine if the evidence is such that a reasonable jury could return a verdict for the non-moving party. Scott v. Harris, 550 U.S. 372, 380 (2007); Holcomb, 433 F.3d at 895. In the event of conflicting evidence on a material issue, the Court is to construe the conflicting evidence in the light most favorable to the non-moving party. Sample v. Bureau of Prisons, 466 F.3d 1086, 1087 (D.C. Cir. 2006). "Factual assertions in the moving party's affidavits or declarations may be accepted as true unless the opposing party submits its own affidavits[,] . . . declarations[,] or documentary evidence to the contrary." Defs. of Wildlife v. U.S. Border Patrol, 623 F. Supp. 2d 83, 87 (D.D.C. 2009) (citing Neal v. Kelly, 963 F.2d 453, 456 (D.C. Cir. 1992)).

As noted above, however, all four claims in this case are to be reviewed under the APA's judicial-review standard. See *supra* Section I.A.3. That standard, set out below, applies in place of the typical summary-judgment standard of Rule 56: "[W]hen a party seeks review of agency action under the APA,…the district judge sits as an appellate tribunal." Rempfer v. Sharfstein, 583 F.3d 860, 865 (D.C. Cir. 2009) (quoting Am. Bioscience, Inc. v. Thompson, 269 F.3d 1077, 1083 (D.C. Cir. 2001)). In other words, "[t]he entire case on review is a question of law." Id. (quoting Marshall Cty. Health Care Auth. v. Shalala, 988 F.2d 1221, 1226 (D.C. Cir. 1993)).

As noted above, the APA requires courts to "hold unlawful and set aside agency action, findings, and conclusions" that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Agency action is arbitrary and capricious if, for example, the agency "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

"'The scope of review [in an APA case] is narrow and a court is not to substitute its judgment for that of the agency,' provided the agency has 'examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.'" Airmotive Eng'g Corp. v.

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FAA, 882 F.3d 1157, 1159 (D.C. Cir. 2018) (second and third alterations in original) (quoting State Farm, 463 U.S. at 43). While the Court "may not supply a reasoned basis for the agency's action that the agency itself has not given, [it] will uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." Bowman Transp., Inc. v. Ark.-Best Freight Sys., Inc., 419 U.S. 281, 285–86 (1974) (citation omitted) (citing SEC v. Chenery Corp., 332 U.S. 194, 196 (1947); then citing Colo. Interstate Gas Co. v. FPC, 324 U.S. 581, 595 (1945)). It is only these "certain minimal standards of rationality" to which a reviewing court holds an agency. Nat'l Envtl. Dev. Ass'n's Clean Air Project v. EPA, 686 F.3d 803, 810 (D.C. Cir. 2012) (quoting Ethyl Corp. v. EPA, 541 F.2d 1, 36–37 (D.C. Cir. 1976) (*en banc*)).

III. Analysis

Although the foregoing involved scene setting portends quite a lengthy unfolding of this drama, the reader may take heart: the analysis here is not taxing. Indeed, the Court need address only one part of Count I to find that the 2014 BiOp is invalid under the ESA. And even that analysis, set forth in more detail below, can be summarized quite neatly: The ESA and its regulations require an ITS when the taking of an endangered species is anticipated. Take was anticipated here, and NMFS did not produce an ITS. The 2014 BiOp therefore violates the ESA.

The slightly longer version is this. As noted above, ESA regulations require that NMFS "[f]ormulate a statement concerning incidental take, if such take is reasonably certain to occur." 50 C.F.R. § 402.14(g)(7). The agency concedes that although "NMFS anticipated take would occur as the result of the action, [it] did not include an ITS in the 2014 BiOp." Def. MSJ at 17. For purposes of the ESA citizen-suit provision, a violation of an ESA regulation is equivalent to a violation of the statute itself. See 16 U.S.C. § 1540(g)(1)(A) ("[A]ny person may commence a civil suit…to enjoin any person, including the United States and any other governmental instrumentality or agency . . . who is alleged to be in violation of any provision of this chapter or regulation issued under the authority thereof…") (emphasis added).

Defendants counter that this seemingly unassailable logic "misread[s] the ESA and MMPA." Def. MSJ at 26. Because the ESA would have required an ITS to find that any take would not violate § 101(a)(5) of the MMPA, see 16 U.S.C. §§ 1536(b)(4)(C), 1371(a)(5), and because NMFS had been "unable to [so] find," the agency concluded that it "was not permitted to include an ITS in that BiOp." Def. MSJ at 27. So, "[r]ather than decline to issue a BiOp entirely, NMFS reasonably sought to harmonize the MMPA and ESA under the unique circumstances presented here." Id. By including the "functional equivalent" of an ITS — its "numerical trigger for reinitiation" of consultation, id. at 29 — NMFS claims to have fulfilled its ESA duties. Defendants then cite legislative history from the 1994 amendments to the MMPA that they claim shows a congressional intent not "to force NMFS, in seeking to implement the ESA and MMPA, to close fisheries." Id. at 27. On the contrary, they argue, Congress included in the ESA the requirement to fulfill § 101(a)(5) of the MMPA "to merely lend urgency to the TRT process [under § 118 of the MMPA] in situations like the one presented by the right whale." (For context, a separate provision of the MMPA, § 118 — not raised by Plaintiffs in this case — requires NMFS to implement a Take Reduction Plan (TRP) with the advice of a Take Reduction Team (TRT) in order to reduce the harm to endangered species to a sustainable level. See generally 16 U.S.C. § 1387(f).) In sum, the agency argues that because the fishery would not have been able to proceed had they complied with the ESA, NMFS was justified in abandoning the Act's directives altogether.

The Service and the statute pass each other like ships in the night. The agency does not appear to invoke Chevron deference for its novel interpretation of the law, but even if it did, the text of the ESA is crystal clear. As the D.C. Circuit has explained, At th[e] first step of the Chevron analysis we "employ[ ] traditional tools of statutory construction" to determine whether Congress has "unambiguously foreclosed the agency's statutory interpretation." Congress may have done so in one of two ways: either by prescribing a precise course of conduct other than the one chosen by the agency, or by granting the agency a range of interpretive discretion that the agency has clearly exceeded. Because at Chevron step one we alone are tasked with determining Congress's unambiguous intent, we answer both inquiries without showing the agency any special deference. And if the agency has either violated Congress's precise instructions or exceeded the statute's clear boundaries then, as Chevron puts it, "that is the end of the matter" — the agency's interpretation is unlawful. Village of Barrington v. Surface Transp. Bd., 636 F.3d 650, 659–60 (D.C. Cir. 2011) (alteration in original) (citations omitted) (quoting Chevron, U.S.A., Inc. v. NRDC, 467 U.S. 837, 843 n.9 (1984); then quoting Catawba Cty. v. EPA, 571 F.3d 20, 35 (D.C. Cir. 2009); and then quoting Chevron, 467 U.S. at 842).

Here, the ESA and accompanying regulations plainly require an ITS, and they require that the ITS find that any take resulting from the proposed agency action will neither jeopardize the continued existence of the listed species nor run afoul of § 101(a)(5) of the MMPA. See 50 C.F.R. § 402.14(g)(7) (requiring ITS "if [incidental] take is reasonably certain to occur"); 16 U.S.C. § 1536(b)(4) (requiring, in order for NMFS to even create a BiOp, that it find that (1) the action does not jeopardize the continued existence of the species, (2) any incidental taking will not jeopardize the continued existence of the species, and (3) any incidental taking of a marine mammal is authorized under § 101(a)(5) of the MMPA). The statutory text itself harmonizes the ESA and the MMPA quite clearly by requiring that both be satisfied in the case of marine mammals. See 16 U.S.C. § 1536(b)(4). NMFS's finding that the lobster fishery would have more than the "negligible impact" allowed by § 101(a)(5) of the MMPA meant that the fishery violated § 7(b)(4) of the ESA. This should have ended the agency's inquiry.

The fact that the alternative is to "decline to issue a BiOp entirely," Def. MSJ at 27, does not change the requirements of the ESA. In fact, that is precisely the purpose of the ESA: "The plain intent of Congress in enacting the [ESA] was to halt and reverse the trend toward species extinction, whatever the cost." Ctr. for Biological Diversity, 861 F.3d at 177 (quoting Tenn Valley Auth., 437 U.S. at 184). In the seminal case on the ESA, the Supreme Court enjoined operation of an already-constructed dam, which "requir[ed] the sacrifice of the anticipated benefits of the project and of many millions of dollars in public funds." Tenn. Valley Auth., 437 U.S. at 174. But this unfortunate outcome could not change the plain language of the Act, wrote the Court: One would be hard pressed to find a statutory provision whose

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tacted the M/V MSC Antonia, which was making its inbound transit, and the pilot aboard reported he could see a sport fisher on the southern jetty. Watchstanders were able to get in touch with one of the persons aboard the sport fisher via cell phone and who reported they were stuck on the southern jetty, taking on water and wearing life jackets.

There were no reported injuries and the vessel owner will arrange salvage.

The cause of the incident is under investigation by the South Carolina Department of Natural Resources.

"The immediate and swift response of our Coast Guard boat and helicopter crews along with our Charleston area maritime partners was vital in safely rescuing all five people from the vessel," said Petty Officer 3rd Class Reilly Taggart, Sector Charleston Command Center Watchstander. "This case is a good example of how we regularly work together with many different agencies to respond to those in need."

Involved in the rescue were: Coast Guard Station Charleston; Coast Guard Air Facility Charleston; South Carolina Department of Natural Resources; North Charleston Fire Department; Sullivan's Island Fire Department; Mount Pleasant Fire Department; Charleston Fire Department; Charleston Pilots; TowBoat U.S.; and Sea Tow.

Coast Guard medically evacuates Captain of the M/V Maersk Batam over 100 miles offshore in the Caribbean Sea

24 March

SAN JUAN, Puerto Rico — The Coast Guard medically evacuated the Captain of the 734-foot Singapore-flagged container ship M/V Maersk Batam Monday night, approximately 100 nautical miles south of Puerto Rico Monday night.

The Captain of the M/V Maersk Batam, 57, is a citizen of the United Kingdom, who experienced life threatening symptoms of a possible stroke during the ship's transit from St. Marta, Colombia to their next scheduled port call in Southhampton, England.

"We commend the Government of the U.S. Virgin Islands for their swift response in coming to the aide of the this mariner and providing the higher level of care he required," said Capt. Eric P. King, Sector San Juan commander. "The tireless and selfless efforts of our Coast Guardsmen every day, as in cases like this, speak volumes to our service's motto of Semper Paratus. They proudly stand the watch in support our nation and the maritime community to facilitate safe maritime commerce during these difficult times."

Coast Guard Sector San Juan watchstanders received the medevac request at 9:55 a.m. Monday from the M/V Maersk Batam, as the ship was transiting 175 nautical miles southwest of Mona Island, Puerto Rico. Coast Guard watchstanders launched a Coast Guard MH-65D helicopter crew from Air Station Borinquen to conduct the medevac, and diverted the Coast Guard Cutter Thetis (WMEC-910) to shorten the distance with the M/V Maersk Batam and serve as an emergency platform for the rescue helicopter if required. Watchstanders coordinated with Customs and Border Protection and U.S. Virgin Islands authorities throughout the medevac. They also inquired and received from the M/V Maersk Batam that the patient's condition was unrelated and that he was not experiencing symptoms of COVID-19.

Once on scene, the helicopter deployed the aircraft rescue swimmer to M/V Maersk Batam to assess the patient's condition. The aircrew used a rescue litter to hoist the ship's captain aboard the aircraft. Following the hoist, the patient was transported the Cyril E. King airport in St. Thomas, U.S. Virgin Islands, where he was received by awaiting emergency medical services personnel and taken to the island's Royal Lester Schneider Regional Hospital.

"Last night I was really proud of our service, there were multiple units thinking creatively, willing to go the extra mile to get a fellow mariner to the appropriate medical care," said Lt. Cmdr. Charles Whitesel, Air Station Borinquen MH-65 Dolphin aircraft commander for the medevac. "The crew was amazing, each member performed exceptionally well during a challenging case, traversing over 200 miles, through scattered rain showers with virtually no illumination to safely deliver the person to the nearest available hospital."

Coast Guard Cutter Hamilton returns home after 80-day patrol

5 April

CHARLESTON, SC -- The crew of Coast Guard Cutter Hamilton returned home Sunday to Charleston after completing an 80-day patrol throughout the Eastern Pacific Ocean.

The crew offloaded $324 million worth of cocaine and marijuana Friday at Port Everglades.

Hamilton's crew, along with an aviation detachment from the Coast Guard's Helicopter Interdiction Tactical Squadron began their deployment in late January by serving as the first National Security Cutter to participate in a Navy Composite Training Unit Exercise. For three weeks, Hamilton integrated with the USS Dwight D. Eisenhower and ships and aircraft of Carrier Strike Group Ten to test the strike group's ability to carry out sustained combat operations at sea. Hamilton's commanding officer, Captain Timothy Cronin, said the event highlighted the unique capabilities of the Coast Guard's 418-foot National Security Cutter.

"Our success in this critical exercise demonstrated how the Coast Guard can seamlessly integrate with joint forces around the globe to advance our national security strategy," said Cronin.

During February, Hamilton deployed to the Eastern Pacific Ocean as part of a partnership that falls under the Joint Interagency Task Force (JIATF) South, a component of U.S. Southern Command. JIATF South oversees the detection and monitoring of illicit traffickers and assists law enforcement agencies with interdiction.

Hamilton's crew seized three drug-laden vessels and apprehended eight suspected traffickers. Two of the vessels were semi-submersibles, vessels built low to the waterline to avoid detection. The two suspected smugglers purposely scuttled their vessel in an alleged attempt to prevent Hamilton's crew from locating any contraband. Hamilton's law enforcement team detained the suspects and turned them over to the Drug Enforcement Agency for potential prosecution.

Hamilton also assisted in the removal of another seven tons of cocaine and 1,400 pounds of marijuana seized from a heavily trafficked transit zone by Coast Guard Cutters Legare, Vigilant, Tampa, Tahoma, Steadfast, Mohawk, Navy vessel USS Tornado, and the Canadian vessel HMCS Nanaimo.

The Coast Guard and partner agency efforts in the Eastern Pacific are critical to disrupting and dismantling the transnational criminal organizations that attempt to smuggle drugs through the ocean and into Central and North America. Maritime interdictions also help reduce the violence and instability caused by transnational criminal organizations in Central America.

Cutter Hamilton is one of two 418-foot National Security Cutters homeported in Charleston. With its robust command, control, communication, computers, intelligence, surveillance, and reconnaissance equipment, the NSC is the most technologically advanced ship in the Coast Guard's fleet. NSCs are equipped with three state-of-the-art small boats and a stern boat launch system, dual aviation facilities, and serve as an afloat command and control platform for complex law enforcement and national security missions involving the Coast Guard and numerous partner agencies.

Passed Over the Bar

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west Harbor at Pemetic Elementary School. After a year, he headed back to the island and taught at Beals High School, then at the Cove School in Jonesport. The second part of Ordie's career was spent lobster fishing close to the shore in the Western Bay off Beals Island aboard his pride and joy, F/V DONNA FAYE.

Ordie's great passion was high school basketball, which he coached for 39 years, at Jonesport-Beals, touting an impressive career of at least 600 victories, 9 State Championships, 13 Eastern Maine Titles and numerous "Coach of the Year" awards. He was also inducted to the UMM Athletic Hall of Fame! In the basketball community, he had special bonds with many officials and fellow coaches. He loved all of his former players and remained close to them throughout his life, always greeting them with a fist bump. Those who knew him and played ball on his teams will lovingly remember the old Bangor "Ordietorium."

Ordie had an infectious smile and an incredible sense of humor. He loved all of his family beyond measure and couldn't wait to get his hands on a new grandbaby, each for whom he had a nickname. He was an athlete and played competitive basketball and softball with his sons well into his fifties. Ordie loved taking trips to Crumple Island and deer hunting camp on Head Harbor Island. Lobster boat racing up and down the coast of Maine, buoy hunting with family, bottle and arrowhead hunting, and swapping stories on the wharf were among the many pastimes he enjoyed. He will be sorely missed by all of his family.

Ordie was predeceased by both his parents, his brother, Harold, and by a granddaughter, Brooke Elizabeth Alley.

Survivors include the love of his life, Donna, to whom he was married fifty-seven years; sons, Ordman Jr. (Skip) and Donna Alley, of Beals, Troy and Bobbie Alley of Jonesport; daughter, Kimberly and Jeff Davis of Carmel; brothers, Wendell and Joyce Alley of Beals, and Donald Alley, Jr. and his partner, Todd Croteau of Beals; sister, Angelina and Leon Smith, Jr. of Jonesport; and sister-in-law, Cedora Alley of Milbridge. Beloved grandchildren include Jessika and Dan Frye, Jeffery and Flori Davis, Brittany and Travis Estes, Matthew, Ryan, Kali, Kaci, and Karli Alley; great-grandchildren, Haylee, Taylor, and Kaleb Frye and Riley, Owen, and Adaline Davis. Special friends include Earle Faulkingham, Sonny Pike, Lew Milam, Richard Parker, Calvin Beal, Jr., Clinton Libby, Daniel Handy, Donald Handy, Dave and Gail Fickett, Calvert Carver (deceased), and Philip Huntley (deceased), just to name a few.

Ordie will be missed by his caretakers, Don Alley, Todd Croteau, John Beal, and "the best friend I ever had."

Wood's Hole Oceanographic News

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the Netherlands. It is designed to give ocean and climate scientists an unprecedented decade-long view of the physical processes occurring across the North Atlantic that help regulate Earth's climate and influence weather in the region.

"Observatories like OSNAP make it possible for us to see the big picture of how the ocean shapes our planet," says WHOI President and Director Mark Abbott. "Without observing systems like these, we are blind to the changes taking place around us."

"OSNAP epitomizes how the U.S. can help advance knowledge of our planet in ways that will enable us to make better, more informed decisions in the face of a changing climate," says Rep. William Keating (D, Mass.). "This information will be critical as we make major financial investments in public and private coastal infrastructure on the Cape, in Massachusetts, and around the nation."

The remote and notoriously stormy region where OSNAP is located is difficult to reach by research ship, and almost impossible in winter. It is where water flowing north from the tropics releases heat to the atmosphere as part of what's known as the Atlantic Meridional Overturning Circulation, which helps moderate Europe's climate and drives the global "ocean conveyor" system of currents. These currents are responsible for long-term climate variations, as well as regional weather patterns.

"We know there are important changes happening in the ocean on many timescales, from minutes to decades," says Amy Bower, chair of the Physical Oceanography Department at WHOI and a co-principal investigator on the grant. "But unless we can keep instruments in place to sample and observe on these long timescales, we can't see them happen."

OSNAP consists of deep-sea moorings—some almost two miles in length—arranged in two segments across the North Atlantic: from Labrador to the southern tip of Greenland, and between Greenland and Scotland. Moorings on both segments hold a variety of instruments that gather a continuous flow of data about the ocean, including salinity, and temperature, as well as free-floating instruments released periodically by research expeditions in the region that help scientists track the pathways and strength of currents below the surface. The position of the mooring arrays and the data they collect allow scientists to observe changes over season-to-season and year-to-year timeframes in such phenomena as the flow of freshwater into the Atlantic from melting ice in Greenland and the Arctic Ocean and the transport of water from the surface to deeper depths as part of the meridional overturning circulation.

"The North Atlantic is key to our understanding of Earth's climate and the ways our climate is changing," says Robert Pickart, a senior scientist and physical oceanographer at WHOI who is also a co-PI on the OSNAP grant.

Data from OSNAP is already challenging researchers to fine-tune their understanding of the role the region plays in global climate and of the many processes that might affect the planet. Early results have shown, for example, that the eastern part of the basin plays a more dominant role in heat transport into the northern North Atlantic, while freshwater flows south into the North Atlantic primarily in the west via the Labrador Sea.

Extending the observational record to a full decade will help scientists better understand the seasonal to annual variations exhibited by currents in the North Atlantic, as well as the sources and impacts of freshwater flowing from the fast-warming polar region. Only with this kind of information in hand can scientists determine how the ocean is responding to, and influencing, long-term climate change. It will also help them identify the best places to monitor long-term as the climate continues to warm in decades to come.

WHOI Starts Construction on New Innovation Hub

Woods Hole Oceanographic Institution (WHOI) will begin construction March 23, 2020, on a new, state-of-the-art building on its Quissett Campus located off Woods Hole Road.

The three-story building will provide offices, meeting, and lab spaces for a new innovation group that will focus on advancing technology for above- and underwater autonomous systems and and the research and development of new sensors.

"This new hub of innovation will help drive advancements in underwater technology, from sensors to robotics and communications, to further our understanding of the ocean," said WHOI President and Director Mark Abbott.

The 50,000-square-foot space will also house staff and laboratories being moved off the Institution's dock area as part of the ongoing Strategic Facility Assessment and effort to rebuild WHOI's waterfront, in partnership with the architecture and planning firm DSK.

Funding for the building project came from a bond issued by MassDevelopment, a group that offers financial assistance to nonprofit organizations and institutions for equipment upgrades, new construction, and renovations. In 2018, MassDevelopment issued a $75 million tax-exempt bond on behalf of WHOI. The bond proceeds also refinanced previously issued debt at a lower interest rate.

The new building will be located adjacent to the LOSOS building, outside of the existing road. It is expected to be completed in 2021.

A Rapidly Changing Arctic

An international team of scientists aboard the U.S. Coast Guard Cutter Healy and the German research icebreaker Polarstern met at the North Pole in 2015 to survey elements in the Arctic Ocean. (Photo by Stefan Hendricks, Alfred Wegener Institute)

A new study by researchers at Woods Hole Oceanographic Institution (WHOI) and their international colleagues found that freshwater runoff from rivers and continental shelf sediments are bringing significant quantities of carbon and trace elements into parts of the Arctic Ocean via the Transpolar Drift—a major surface current that moves water from Siberia across the North Pole to the North Atlantic Ocean.

In 2015, oceanographers conducting research in the Arctic Ocean as part of the International GEOTRACES program found much higher concentrations of trace elements in surface waters near the North Pole than in regions on either side of the current. Their results published this week in the *Journal of Geophysical Research-Oceans*.

"Many important trace elements that enter the ocean from rivers and shelf sediments are quickly removed from the water column," explains WHOI marine chemist Matthew Charette, lead author of the study. "But in the Arctic they are bound with abundant organic matter from rivers, which allows the mixture to be transported into the central Arctic, over 1,000 kilometers from their source."

Trace elements, like iron, form essential building blocks for ocean life. As the Arctic warms and larger swaths of the ocean become ice-free for longer periods of time, marine algae are becoming more productive. A greater abundance of trace elements coming from rivers and shelf sediments can lead to increases in nutrients reaching the central Arctic Ocean, further fueling algal production.

"It's difficult to say exactly what changes this might bring," says Charette. "but we do know that the structure of marine ecosystems is set by nutrient availability."

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Judge Boasberg's Decision...

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terms were any plainer than those in § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies "to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence" of an endangered species or "result in the destruction or modification of habitat of such species… Id. at 173 (omission in original) (quoting 16 U.S.C. § 1536(a)(2)). Defendants cannot rewrite the statute just because they do not agree with its consequences.

Finally, the Service's inclusion of a "numerical trigger for reinitiation" of consultation, Def. MSJ at 29, does nothing to cure its violation of the Act. Setting a threshold of an acceptable take level for the fishery, see generally 50 C.F.R. § 402.14(i)(4), is only one of many mandatory components of an ITS. Id. § 402.14(i)(1)(i)–(v). In any case, the Service does not deny that its "functional equivalent" was not, in fact, an ITS. See Def. MSJ at 3, 18, 29. As stated *ad nauseum* above, the ESA and its regulations require an ITS. Any non-ITS substitute, even one that fulfills one of several functions of an ITS, will not do.

In short, the Service's failure to include an ITS in its 2014 BiOp after finding that the American lobster fishery had the potential to harm the North Atlantic right whale at more than three times the sustainable rate is about as straightforward a violation of the ESA as they come. The Court therefore declares the 2014 BiOp to be invalid under the Endangered Species Act and will order briefing from the parties on the issue of an injunctive remedy.

Having so found, the Court has no need to engage in Plaintiffs' other arguments as to why the 2014 BiOp violated the ESA. But NMFS would do well to adhere to all of the Act's requirements in any future BiOps. For example, Plaintiffs here also pointed out that the Service evaluated the fishery's impact on right whales using the MMPA's "serious injury and mortality" standard, see 16 U.S.C. § 1387, instead of the broader "effects of the action" standard required by the ESA, which includes "all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action." 50 C.F.R. § 402.02; see id. § 222.102 (defining "take" to include actions that injure a listed species "by significantly impairing essential behavioral patterns, including[] breeding, spawning, rearing, migrating, feeding or sheltering"); see also, e.g., C1 26787 (2014 BiOp considering lobster fishery's "potential to seriously injure or kill" right whales). Put differently, just because the Court had no need to discuss other features of the 2014 BiOp does not mean that they complied with the ESA (or, for that matter, the MMPA) and should be repeated in future BiOps.

IV. Conclusion

For the foregoing reasons, the Court will grant Plaintiffs' Motion for Summary Judgment and deny Defendants' and Defendant-Intervenors' corresponding Cross-Motion for Summary Judgment. A contemporaneous Order so stating will issue this day.

/s/ James E. Boasberg JAMES E. BOASBERG United States District Judge

Date: April 9, 2020

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Funds have been raised for building an amusement hall at Squirrel Island to cost about $1,500 and to be completed by July 1st.

The Lindsay House, Rockland, W. B. Hills, proprietor, entertained 1296 traveling men and showmen during the year ending February 1st.

Lot No 25, City's plan, on Squirrel island, ahs been sold by Mrs. J. B. Ham, of Lewiston, to Mrs. Mary Emerson of Bradford, MA, who will erect thereon a handsome cottage to be occupied the coming summer.

The new dining room at the Thorndike Hotel, Rockland is now in use, and is a very beautiful room. The panels of the ceiling are filled in with a most artistic blending of colors, while the handsome painted border is relieved at intervals by dainty fruit groups. C. B. Emery is the artist.

Eighteen cottages will be built at Wells Beach in the spring. The Kimball cottage is completed and is a handsome structure. The Minnetonka cottage is nearing completion and is called the best looking house at the beach. This, as well as the Kimball, has been built by Joseph S. Winn. The Minnetonka cottage will accommodate 25 boarders and A. A. Perkins will b proprietor.

Sherman & Hatch of Rockland, have contracted with Mr. A. E. Brooks of Boston to build, the coming season, a handsome cottage at Ash point, directly opposite Ash Island. There is not a more beautiful location on the Maine coast. The seaward view is delightful at that point, and the surroundings are all pleasant. The cottage will be of handsome design, and the contract price is $6,000./

The property near Small Point, known as Morse Mountain, has been bonded by Bath parties who contemplate establishing a summer resort there. This mountain is the highest piece of land in this vicinity, the view from the top embracing all of Casco Bay, Cape Elizabeth, the White Mountains, new Meadows, the Sheepscot, Boothbay and Monhegan. The approach is from Small Point road across Sprague's River.

The Bay Point House, Rockland, will be opened to the public July 1st, with C. O. Chamberlain, of St. James Hotel, Jacksonville, as landlord. The grounds will be beautified and other improvements made in the spring. H. Burton Milliken, one of the best known advertising men in the country, has been engaged to manage the company's advertising business, and will make his headquarters in Rockland through the season.

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A contract has been given Sherman & hatch, the Rockland builders, for an elegant summer hotel to be erected at Ash Point. A most delightful plot of ground has been purchased by New York and Rockland capitalists. The natural beauty of the location, the beautiful Island lying off the mainland, Old Ocean stretching away for thousands of miles, charming drives, delightful sails and the clear air filled with ozone, combine to render this one of the most attractive summer resorts on the coast. It is far enough removed to be very exclusive and yet highly enjoyable. The Boston steamers will stop at a wharf to be erected form the solid granite ledges which run out to main channel. Ash Point is located on the channel, up and down, which daily in the summer time hundreds of vessels, steam yachts and steamers pass. In back of Ash island is a charming island, and a beach delightful for bathing. Telephone and telegraph lines connect Ash Point with Rockland.

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FROM THE HUB OF THE UNIVERSE.

The First Vessels—Early Ships of The Mediterranean.—The First Sailing Vessels.—Vessels Caulked with Flax and Then with Lead.—The Introduction of Steam Propulsion.—The Two Divisions of Shipbuilding.—Science in Shipbuilding.—The above Subject suggested by The Late Captain Jesse H. Freeman.—Fire Notes.

(Correspondence of The Journal.)

Said the late Captain Jesse H. Freeman to me something less than a year ago. "Why don't you write an article on shipbuilding, and with it something of the world's history of ships? Such an article would interest everybody, and it would be interesting to know what the first ship sprung from; where the first ships were built; what of, how, and by whom; --and then you might go on and tell about building different kinds of ships, and so on." This seemed to me a good suggestion and I have acted upon it.

To go back to the very first forms of shipbuilding, or boat building, the first examples that we find, with any degree of certainly were probably canoes and coracles; though before the rudest of these primitive craft were constructed, there is no doubt but that a still ruder means of employed for crossing rivers and lakes—a floating fog, or two or more logs lashed together in the form of a rude raft. The earliest Egyptian drawings show boats constructed of sawn planks, and having both sails and oars. So far as can be learned the galleys of the Mediterranean at the early dawn of civilization appear to have been open, at least in the middle portion; to have been built with keel, ribs and planking, and to have been strengthened crosswise by the numerous plank seats on which the rowers sat. Ships continued, however, to be of such small draught that they were beached every winter; and I remember when I was reading Caesar at school, of that avaricious gentlemen mentioning some of the long ships with which he invaded Britain, that could only approach the shore in such a point that the soldiers in disembarking were breast-high in the water. The Romans built their vessels of pine, cedar and other light woods; but their ships of war were of oak at the bows, clamped strongly with iron or brass, for use as rams—a custom now curiously revived after about 2000 years of disuse. According to Caesar, the Venetil first built ships, entirely of oak. The rapid oxidization of iron bolts led to the adoption of copper and brass instead, about the time of Nero. Before Nero's time the planking had been caulked with flax, and the seams had been pitched. By referring to authorities on the subject, I find that in Trajan's reign, sheathing of lead fastened on with copper nails had been used a protection for the timbers form the devastating insects of the Mediterranean.

With the decline of Roman greatness came a new era for shipbuilding. The hardy Norsemen had choppy seas and the swelling Atlantic to fight with, and their vessels differed greatly from the galleys and quinqueremes of the Roman Empire. Being far smaller, they were built more stoutly, with bluffbows, and a lug-sail which could be braced well up to the wind. As there is good evidence that the Norse ships visited the "New World," at an early period, they must have been of considerable power. But we have very little knowledge of the construction of these vessels, except that they had high prows and sterns, to resist the waves. Unlike the galleys which were built for rowing, the Norse ships were propelled by sails. Gradually the galleys were increased in size until they varied from a capacity of eighty oars upwards. The Venetians, how3ever, are said to have built ships of from 1200 to 2000 tons burden. But large ships constructed for sailing only, seem to have come into general use, together with the mariner's compass, in the beginning of the 14th century. One hundred years later the addition of the bowsprit added much to the sailing power of vessels. In the reign of King Henry V, ships had been built strong enough to encounter ice in the whale fishery, and from this period the history of shipbuilding is resolved into the history of individual parts, for the main principles of wooden ships were already established. In the reign of Henry VII, the cumbersome fourth mast began to be dispensed with, and its successors shifting top-masts came into use. Simultaneously the lofty stems and sterns fell gradually into disuse. Port holes for war vessels were invented about the year 1500; and there is a record that there were cutter-rigged vessels as early as 1567. Naval architecture flourished during the succeeding century. Within the present century, that in which we live, the introduction of steam has led to the building of ships with finer lines, both for bow and stern. About 1836, iron was introduced as a material for shipbuilding, and has now so far superseded wood, that, taking steamers and sailing vessels together, about twenty iron vessels are built, to one of wood—that is, the world over. To pass on, we now come to the actual art of shipbuilding, which is divided into two distinct parts. They are: the theoretical, known as naval architecture, and the practical, called shipbuilding. The naval architect designs the ship with reference to the objects intended in her construction, to the speed required, powers of storage, and so on; while the shipbuilder works from his drawings, and gives practical effect to the theoretical designs. Naval architecture on a theoretic basis is of comparatively recent date, for, as in all cases, practical efforts, more or less in the dark, have preceded by many ges the theorems of the man of science; nor is it at present by any means, an exact science. Some of the most successful ships have been simply happy experiments.

All ships have to possess certain qualities, the principal of which are buoyancy, stability, handiness, and speed; but it is not possible for any ship to posses at the same time the maximum of all these. To some extent they neutralize each other. The skill of the naval architect is shown in duly proportioning them to one another, ascertaining which are the more important in each particular case, and providing these without unduly impairing the others. In some vessels it is essential that the greatest possible speed shall be attained, while, as they are to work only in smooth water their stability (or freedom from excessive rolling, and tendency to right themselves when keeled over by a wave) is only secondary. In others, which have to weather long continued storms in mid-ocean, speed may have to be sacrificed to attain greater steadiness. In sailing vessels, where the means of propulsion is not under the control of the crew, as steam vessels, handiness, the property of answering quickly to the helm, and of readily performing various manoeuvers, such as tacking, under all conditions of weather, is often the quality to which the most attention has to be paid It will be interesting to note some of the fundamental principles of naval architecture, but should I enter upon this, it would take up too much room for one letter; but I shall do so in my next, and go on to speak about wooden shipbuilding which is the oldest and most time honored process—the art of the shipwright who forms the vessels of timber. I shall also speak, in connection with ship construction, of the process of building iron vessels, which will be interesting form the fact that naval architecture as applied to iron ships will in the future, be illustrated on a grand scale in the yards of Bath.

The terrible fire calamity of last Sunday night in which ten Italians lost their livers, threw a pall of horror over Boston, but a few hours later this was changed to apprehension and fear, lest the time-honored structure opposite the magnificent Sears Building should fall a victim to the fiery element. Many eyes were fixed upon the front of the Old State House as the gilded letters in the legend of the State of Massachusetts, which are embossed thereon: "Ense petit placidam, sub libertate quidem: wee lighted up by the flames that were consuming the big Sears Building. And when the flames were finally subdued, every patriotic citizen breathed easier. One curious incident occurred during this fire. The streets about the fire were roped off. Many, of curse, attempted to pass under the ropes, but were stopped. Soon M. J. Montgomery Sears, the owner of the burning building came along, and attempted to pass under the ropes, but was stopped by an officer. "All right," said Mr. Sears pleasantly, "in 1879, when several of my buildings were burned, I was absent from the city, and now that I am here, I thought I would like to seem some of my property burn." "Oh!, your are Mr. Sears then," returned the officer. "all right come right in and enjoy yourself," said he as he lifted the roope to allow Mr. Sears to pass under.

Boston has had her share of fires of late. A $7,000,000 fire on Thanksgiving Day, one $90,000 fire and a $100,000 one since, and then those two last Sunday.

ALLAN ERIC.

Boston Feb. 8, 1890.

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COMMERCE AND TRADE.

During the last six months of 1889 there were shipped 2000 carloads of freight from Fort Fairfield, the product of they northern part of Aroostook County.

In the Bangor wholesale market jobbing process are as follows: apples, $2.00 to $3.00 per barrel; butter, 18 to 20 cents; yellow eye beans, $2.50 to $2.65; new cheese, 10 to 12 cents; eggs, 20 cents; fowl, 10 to 14 cents; chickens, 14 to 18 cents; potatoes, 60 to 70 cents, and hay, $8 to $10.

The value of exports from Portland last week amounted to $312,629.96. they consisted of $601, 303 ft. lumber, 602,975 lbs. cheese, 765,286 lbs. bacon, 26,520 lbs. butter, 19,013 bush. Peas, 6934 bush. Wheat, 9345 bbls. apples, 7650 lbs. skimmings, 2000 lbs. ham, 238 cases of mattresses, 901 cases match splints, 51 cases leather, 11 cases sundries, 5 cases carpets, 24 bbls. casings, 5 bales furs, 6600 gals. Kerosene oil, 11,688 lbs. lard, 2808 lbs. sugar, 2000 lbs. beans, 17,8984 lbs. tobacco, 423 bbls. bread, 405 bbls. flour, 200 boxes herring, 100 M. shingles, 66 cars, 666 packages chairs, 45,665 bush. Corn, 19,600 bush. Oats, 5030 sacks flour, 12 bbls. lead dross, 46 cases leather, 262 head cattle, 1930 empties.

Among recent charters are the following: Ship Belle O'Brien (to arrive), 65,000 cases refined Philadelphia to Japan, 34 cts.; ships Standard and Jas. Drummond, (to arrive), from Philadelphia to San Francisco, general cargo, basis about $10.50 per ton, dead weight capacity; schooner Maynard Sumner, from Savannah to St. Jago, lumber, at or about $7.50 and back north of Hatteras, bag sugar, 16 @ 17 cents; schooner Mina Belle, from one or two ports North Side of

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Cuba to Sandy Hook f.o., (three consecutive trips), bag sugar, 18 cents New York, or 19 Boston; option of general cargo out, 40 cents per bbl.; schooner Alfaretta S. Snare, from Savannah to New York, lumber, $7; schooner Maud, Philadelphia to Trinidad and back, p. t.; bark Northern Empire, Portland to Montevedio for orders, lumber, $11; brig Sullivan, Portland to Porto Rico, out and back, p. t.; schooner J. E. Shepard, Horse Island to Key West, ice, $2; schooner John Price, Chaptank River, Md., to Bath, ship timber, $5, per cubic foot; bk. Nereid, from Turk's Island to Boston, salt, 8 cents; schooner Nina Tillson, New York to Demerara, general cargo, $2,600.

The ocean freight market shows some increase in the volume of business in the line of charters this week. There has been ho substantial improvement in rates paid, but the market for the medium and heavier classes of off shore tonnage derives a steady and firm support from the continued small available supply and the paucity of the inward bound fleet The movement in barrel petroleum has narrowed down to an occasional charter for high grades refined or products, but as seeking vessels are few rates are nominally firm. Th River Plate trade shows a degree more of vitality, there having been several fixtures for lumber at $17 @ $17.50 from the yellow pine ports to Montevideo and Buenos Ayres, $18 to Ensenada, and $20 for Rosario, whilst from the east $11 @ $12 has been paid on spruce to the lower ports, and 16 @ 17 cents on general cargo from New York. From north side ports to north of Hatteras sailing vessel rates for molasses have settled to $1.75 @ $2 per 110 gallons. The coastwise trades remain dull, and rates on lumber from the yellow pine ports are barely steady. Colliers are almost neglected, and the nominal quotations from local depots to Boston and vicinity are 95 cents and $1. Ice freights are strong, and vessels for this cargo are in increasing request.

THE FISHERIES.

The lobster catchers at Matinicus are making some large catches.

Captain A. J. Pettengill, of Portland, sold the last three vessels of his fishing fleet, the Elsie M. Smith, Addie M. Deering and Fannie Spalding to Gloucester parties. It is the last of a transfer in which nine schooners—the largest fishing fleet owned by one firm—have been disposed of and left Portland.

Church, Hathaway & Co., of Tiverton, R. I., have made arrangements for a big business at Linekins Bay, East Boothbay, next season. They intend putting out some $150,000 in factories and steamers for the catching of porgies and the manufacture of oil and fertilizer. They will run two large factories at Boothbay.

Advices from the Boston Fish Bureau report receipts of mackerel, 1050 barrels from Nova Scotia and 221 barrels from Ireland. The Cape Town mackerel have not yet arrived. Pickled Bank codfish $3.75, per qtl. For large. Not other varieties are selling. A few barrel herring have arrived from Newfoundland by vessel which sell at $3.50 per bbl. Box herring, mediums 13 cents, lengthwise 14 cents 1's 10 cents and bloaters 70 cents per box.

SHIPBUILDING NOTES.

Houghton Brothers, Bath, will put up their ship as soon as the necessary timber arrives.

H. Donnell, Bath, has the keel laid for the 118 feet keel for a schooner which he is to build.

George Rice & Son, East Boothbay, have contracted to build a fine yacht for western parties.

Denn & Elliott, the Thomaston shipbuilders, contemplate building a marine railway in the Ranlett shipyard.

Twenty-six vessels are already contracted for at Bath shipyards, for 1890, and a portion are now on the stocks.

Master Carpenter, Albert Strout, of Milbridge, is in the woods with a crew to cut the frame for a centre board schooner of 125 tons, to be commanded by Captain Godfrey.

Washburn Bros., Thomaston, will build four new vessels the coming season, two from 500 to 600 tons, one of 1000 tons and one of 250 tons, and will employ a crew of from 50 to 60 men.

F. B. Vinal, of Vinalhaven, is building a yacht. She will be 25 feet over all, 8 feet 2 inches beam, will be sloop rigged. H. Y. Carver, of the same place, intends building a fine yacht in the spring.

Dunn & Elliott, Thomaston, have laid the keel and have up some of the frame for a schooner of 650 tons, to be commanded by Captain David Sumner, of Tenants Harbor, now master of schooner R. Bowers.

Advices have been received announcing that the four-masted schooner Douglas Dearborn has been spoken and is all right. The report given publicity a month ago to the effect that she had been abandoned at sea was unfounded. A. Sewall & Co., of Bath, are her managing owners.

Kelly, Spear, & Co., Bath, have contracted with Phineas Kimball of Trevertt, to build a three-masted schooner of the following measurements: 105 feet keel, 29 feet beam, and 8 feet deep. The Skinner schooner at this yard had been named the Bertha Louise in honor of the daughter of Mr. Skinner.

The elegant steamer Cottage City, will make her maiden plunge from the yard of the New England Co., Bath, the last of the present week. She will then be towed to the Iron Works where she will receive her machinery. April 1st, will see her ready to go on the route. The keels for the Curtis and Warren schooners have been laid, each measuring 182 feet.

The new and handsome ship Rappahannock is too large to steer well. Off Seguin the tugs left the ship, which spread its lower top sails to a stiff N. W. breeze and presented a beautiful spectacle as she began her maiden cruise. Arriving at Philadelphia the ship will load with oil for Japan.

The Maine Shipbuilding & Navigation Co., of Wiscasset, was organized Monday. The following officers were chosen: President, A. H. Lennox; Clerk, Edwin Amaden; General Manager and Treasurer, R. T. Randlett; Attorney, Henry Ingalls; Directors, A. H. Lennox, Henry Ingalls, R. T. Randlett, L. W. Givvs, R. H. T. Taylor and Gustavns Randlett. Capital stock is $100,000; the amount paid in, $10,000. As soon as a charter can be obtained it is proposed to proceed immediately to make arrangements to build two vessels. It is expected that work will begin by June 1st.

Pilot Murdock, of Bath, has devised a plan which he thinks will overcome some of the difficulties in rigging big schooners, so that the first storm they encounter will not twist their "sticks" out. He proposes to have an iron bank countersunk into each mast, about half way from the deck to the masthead, with eyebolts to which shrouds may be fastened. The other shrouds could stand as they do at present. Thus the first of shrouds would have such a "spread" that they would act much like those on the lowers masts of

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Woods Hole...

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Nutrients fuel the growth of phytoplankton, a microscopic algae that forms the base of the marine food web. Generally speaking, more phytoplankton brings more zooplankton—small fish and crustaceans, which can then be eaten by top ocean predators like seals and whales.

Higher concentrations of trace elements and nutrients previously locked up in frozen soils (permafrost) are expected to increase as more river runoff reaches the Arctic, which is warming at a much faster rate than most anywhere else on Earth. While an increase in nutrients may boost Arctic marine productivity, Charette cautions that the continued loss of sea ice will further exacerbate climate warming, which will impact ecosystems more broadly.

"The Arctic plays an important role in regulating Earth's climate, with the ice cover reflecting sunlight back to space, helping to mitigate rising global temperatures due to greenhouse gas emissions," he adds. "Once the ice is gone, the Arctic Ocean will absorb more heat from the atmosphere, which will only make our climate predicament worse."

Funding for Arctic GEOTRACES was provided by the U.S. National Science Foundation, Swedish Research Council Formas, French Agence Nationale de la Recherche and LabexMER, Netherlands Organization for Scientific Research, and Independent Research Fund Denmark. The Arctic GEOTRACES expeditions were supported by the captains and crew of the USCGC *Healy* and the R/V *Polarstern*.

Woods Hole Oceanographic Institution is a private, non-profit organization on Cape Cod, MA, dedicated to marine research, engineering, and higher education. Established in 1930 on a recommendation from the National Academy of Sciences, its primary mission is to understand the ocean and its interaction with the Earth as a whole, and to communicate a basic understanding of the ocean's role in the changing global environment. For more information, please visit www.whoi.edu.

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a ship, and greatly relieve the strain on the masts, besides keeping them from buckling, while the other ser would act as they do now. On the other side of the mast, and running from the cross trees to the deck, would be a stout iron rod, and on this the sails would hoist by means of grips instead of hoops, a method adopted on some yachts.

21 February
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The Ice Situation.

Ice seems to be at present the all absorbing topic of conversation throughout the State. It would appear as if the article itself was sufficiently cool to prevent people from getting so excited over it, and yet along the Penobscot and Kennebec, and on the coast as well, conservative business men are wroought up to a high pitch.

The complete failure to secure a crop on the Hudson and other usual sources of supply has turned all eyes towards Maine, where it is well known ice is a staple product that never fails, a crop that can be absolutely depended upon with every return of winter. And while to the south of us rivers and ponds are free from ice here our lakes and waterways are covered with a crystal covering as clear and thick as in ordinary years, and furthermore the absence of any considerable snowfall up to the present week has made entirely unnecessary the usual scraping and planing. Maine ice operators have therefore been able not only to gather as superior a harvest as ever before but also at much less expense than in any previous year. That much of the ice secured this winter has been housed at an expense of not more than ten to fifteen cents a ton is a conservative estimate. Therefore when offers of three dollars per ton are freely made the margin of profit is sufficiently large to arouse even the most staid business man.

The benefits to be reaped by Maine from the ice harvest of this bonanza year will be numerous and far reaching. Not alone will the operators get a very handsome return for the money invested but a vast amount will through various channels be put into circulation. Employment is being given to an army of workmen, and this too at good wages, a special feature being that it comes at a time when there is usually much idle labor and when money is especially needed by them. Aside form those directly employed in ice harvesting great numbers of carpenters and mechanics generally are kept busy. In building the ice houses and stacks great quantities of lumber are brought into requisition and thus the winter sawmills are rushed as never before.

Already a large number of vessels are employed transporting pond ice from Maine coast towns to New York, Philadelphia, Baltimore and other Southern cities and later on as the river ice begins to move forward a big fleet will be brought into use, 2500 vessels being a low estimate of the vessels that will bne required to transport the ice harvested on the Penobscot and Kennebec. This means lively times for the coasting fleet and assures a prosperous season for Maine shipping.

Hon. J. B. Stearns has purchased the fountain which was displayed at the Maritime Exhibition in Boston and the same will henceforth help beautify his elegant grounds in Camden, one of Maine's most charming resorts.

The Rockland Courier-Gazette truly says that it would pay the counties lying on the Maine coast, which have so many attractions for summer visitors, to spend a little money in improving the country roads in order to make the drives more popular.

The Thayer Brothers, Boston millionaires, have forwarded to the Rangeley Lakes a fine steam launch, christened the Kara. She was modeled by Burgess, is 41 feet over all and registers seven tons. Her hull is built of southern pine, and the cabin is of mahogany and cherry. She is to run between Upper Dam and South Arm the coming season. The Thayer Brothers are said to be worth twelve millions. They bought a fine camp last season at the Upper Richardson and have been making extensive outlays and putting in a large amount of furniture for their summer resort among the scaley tribes in the wilderness of Maine. They are young men, 30 years old, twins. George Newton of Andover is their agent and guide. This is the second camp on the shores of the Richardson owned by millionaires, the other being J. P. Whitney of California, who has a camp costing abut $40,000.

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COMMERCE AND TRADE.

The winter shipment of ice from Maine ports to New York, Philadelphia, and cities further south is making a big demand for vessels and freights for this class of tonnage have reached quite high figures.

Portland's exports last week were valued at $125,000 and comprised the following: 8710 bushels peas, 7420 barrels apples, 250 lbs. bacon, 17,720 lbs. cheese, 1850 cases canned meat, 2 cases leather, 1350 sacks flour, 17 cases oranges, 4 cases hammers, 162 cases match-splints, 35 bundles broom handles. The imports were 2630 boxes tin plate, and 1000 sacks fine salt.

The report of Co. Jared A. Smith, U. S. Engineer, on the survey of Pleasant River, Maine, has been transmitted to Congress by the Secretary of War. Pleasant River is in Washington County and is the water-way to Addison and Columbia Falls, the latter being at the head of navigation. Sixty-five or seventy vessels a year go up to Columbia Falls for lumber, pulp wood and agricultural products. Addison Point has a still greater commerce. At Columbia Falls one vessels has been built the past year. Co. Smith recommends an appropriation of $3500, part for dredging the channel and the rest for erecting beacons to mark Channel rocks and Coffin's rocks, dangerous obstructions which are covered with at high water. If the Lighthouse Board should erect the beacons, Co. Smith thinks $1200 will do the dredging.

The ocean freight market the past week has been devoid of anything approaching animation, and the meagre supply of seeking tonnage has alone served to maintain rates. It seems, however, to be the general sentiment, nevertheless, that renewed activity in prominent departments is to be reckoned as among the probabilities of the near future. Long voyage sailing vessels continue in small supply, and though the enquiry at the moment is light, that best rates recently paid are readily obtainable. There is no change in River Plate freights from last week's quotation, and whilst business at the moment is very slow, the advices are indicative of renewed activity as the season advances. Coastwise freights with the exception of ice from Maine ports, are dull. Naval store freights form the primary markets are easy.

Among recent charters are the following: Ship W. H. Connor, 54,000 cases, New York to Hong Kong, 30 cents, Shanghae 37, for Japan, 34; ship Wm. G. Davis, Japan to New York, via Portland, $10,500 ; bark Edward Cushing, New York to Port Natal, general cargo, private terms; brig Harry Smith, New York to Havana, lumber, $4, and bbl. petroleum, 50 cents; bk. Carrie Winslow, New York to West Coast, South America, general cargo, private terms; schooner Henry Crosby, New York to Havana, lumber $4 and bbl. petroleum, 50 cents; Flora Condon, Jacksonville to New York, lumber 7.37 ½, free wharfage; schooner Alfaretta S. Snare, Barren island to Savannah phosphate, $1.35 and back to New York, lumber; brig Sullivan, Portland to Porto Rico and back, private terms; schooners J. E. Righter, Lottie E. Friend, E. F. Mansfield, E. H. Weaver, A. F. Manson, John Paul, and M. F. Sprague, Maine ports to New York, ic, $1.15 @ $1.25.

Moosehead's KATAHDIN

Continued from Page 1.

ernment to replace old engines. The Maine DEP was contacted and money was made available to help with the cost of the new engine. Then she contacted Kevin Hampson at Milton Cat and they made the decision to repower KATIE with a C-18 469 hp Caterpillar diesel engine. She would also receive a new Twin Disc MG516 6 to 1 gear. Then delays occurred and it they were forced to run another year with the old engines and Liz added, "No one slept. Our guys babied that engine. There was some lag in forward gear with the shaft so we had to have somebody down in the engine room to tell the captain when the shaft stopped spinning before he could shift the boat. In the very beginning of the season we had one charter that the captain lost forward propulsion jammed the boat into reverse and tried to back it out of the cove. We got a tow and were worried we weren't going to be able to get things fixed, but we did."

This fall the season was cut a week short so they could have some decent weather before winter set in to replace the two 610s with the C-18. With the season completed they had a crew member take up some of the floor boards and with an I-beam system they hoisted the old engines out. The repower was done by The Shipyard at Boothbay Harbor in Boothbay. New engines beds were constructed and installed and by the first week of November the new C-18 was in place. They also replaced one of the two generators on board. Liz explained, "We have two generators, a Generac and a Caterpillar. The Caterpillar was such an old model that we don't know what model, all the numbers are worn off. We replaced that with a brand new C-4."

What was the hardest part of the repower for Liz, destroying one of the engines. Under the guidelines from the DEP both engines were supposed to be destroyed, but Liz was able have one of them put into the Museum on display, but that meant the other and the generator had to be broken up.

KATIE was built at Bath Iron Works at Bath in 1914 and then taken apart and brought to Greenville where she was rebuilt and launched. Originally, she was steam powered, but she had been dieselized with a Fairbanks Morse engine in 1922. The 610s had been put in in the 1950s.

Moosehead Lake's KATAHDIN Gets a New C-18 Caterpillar

There was something else that needed to be looked at and that was her electrical system. Liz had concerns and she asked a couple of local electricians to come and look at the problem and they would not. Liz thought that this was not a good sign and asked The Shipyard at Boothbay Harbor to survey the system. They made some modifications so everything was safe for the summer and asked for bids from a few places. They accepted the bid put in by The Shipyard at Boothbay Harbor and while the repower was happening they would also replace the electrical system.

As the money continues to go out the door Liz is getting ready to do a capital campaign to raise money for the next rainy day. It is also known that KATIE will have to come out of the water in three or four years and that is not an inexpensive proposition.

The first site of the Moosehead Marine Museum was on the other side of the cove where the Black Frog restaurant is located. Liz's father was one of the first Directors of the Museum. Her father was friends of Lou Hilton, who was a descendant of Louie and Harry Oakes. Liz added, "When I was 16 years old we had a camp on Hartford's Point and I complained one day that I was bored for probably one time too many. My father said, 'Well I have something you can do,' and he dragged me kicking and screaming to the Museum which had just started out and I was typing up labels for the Museum and I had to give tours of the boat. When I came to apply for this job everybody asked me, 'have you been on the boat before?' I said, 'Yeah, I used to give tours on it.' I gave them the whole history of the boat and I think that is why I got the job. But if you told me at the age of 16 that I was going to come and do this job some 35 years later, I would have told you were crazy."

Liz continued, "The Museum started out as a real grass roots affair. The Museum bought the boat and originally intended to have it as a floating exhibit. They didn't intend to cruise with it but they did the original marine survey with Giffy. He gave them their list of stuff to fix and they started fixing it. By the mid-80s they were able to cruise and she's cruised every year since then. I think the late '80s they started doing some deck work and in the '90s they re-clad the hull. BIW came up and they did the work pretty much at cost. Shortly thereafter they extended the upper fantail again because it had been removed when Scott Paper was towing logs. At some point there was lower deck work done."

Over the years the Museum has grown as more items are unearthed in people's attic pertaining to the history of the lake. They have also been blessed with a number of people who have taken care of the artifacts and set up great exhibits.

The Museum and KATIE have great support. Ticket sales last year were just under $200,000, the best ever; another $25,000 to $40,000 in charters; the galley sales were $50,000 and another $5,000 from gift shop sales. Then members and donors give another $50,000. However, running a vessel like KATIE is not cheap.

"We are spending a ludicrous amount of money right now," added Liz. "We are so fortunate that we had the money to do the engines and was in a position to borrow so we could do the electrical system. Even though we are not under Coast Guard supervision it behooves us to bring everything up to Coast Guard standards. At this point we are looking at an entire replacement of the upper deck, which is going to cost just over a million bucks," continued Liz. "The guys from the shipyard, when they went to do the engines, looked at our sea chest and when they took the plug out it broke. They put in a valve so we don't have to have the plug anymore which is great, but when they were doing it, they said that the sea chest is actually attached to the inner skin not the outer skin. That is going to have to be done when the boat comes out."

There is strong support for KATIE and if you have not experienced a cruise out on the lake, do not hesitate. Block a day out this summer and head to Greenville and I will guarantee you that you will find the love too.

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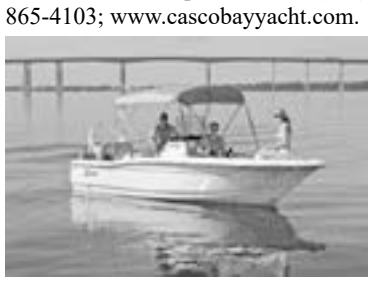

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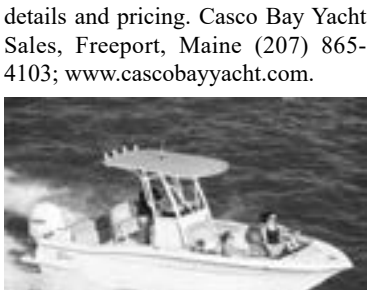
21' SCOUT 215 XSF CENTER CONSOLE, 2020. With Yamaha F150XB outboard, Midnight blue hull color, sport package, aluminum T-top with aft spreader light, T-bag, rocket launchers, forward seating backrests and stern seats, T-top enclosure, powder coat T-top option, raw water washdown and trailer. Call for more details and pricing. Casco Bay Yacht Sales, Freeport, Maine (207) 865-4103; www.cascobayyacht.com.



21'SCOUT 215 XSF, 2020. White Hull Color, Yamaha F150XCA Outboard, JL stereo upgrade, Powder coated T-top enclosure, rocket launchers, raw water washdown, bait pump, SeaStar hydraulic steering upgrade and EZ Loader Trailer. Call for more details and pricing. Casco Bay Yacht Sales, Freeport, Maine (207) 865-4103; www.cascobayyacht.com.

21' SEA RAY 215 EXPRESS, 1995. With 2008 MerCruiser 5.7L I/O, bimini top, cockpit cover and 1995 Venture trailer. Asking $10,500. Casco Bay Yacht Sales, Freeport, Maine

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23' SCOUT 235 XSF CENTER CONSOLE, 2019. With Yamaha F250 outboard. White hull color. Loaded with options and extras. Call for more details and pricing. Casco Bay Yacht Sales, Freeport, Maine (207) 865-4103; www.cascobayyacht.com.

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27' SCOUT 275 DORADO, 2018. White hull color and painted silver accent stripe. Twin Yamaha F200XCA outboard with 50 hours with full factory warranties. Garmin Display 7612 XSV upgrade. Garmin B60 transducer, GMR VHF radio, power assist hydraulic steering, Brisa Cayenne cushion package, bow cover, hardtop drop cushion, hardtop full enclosure, port and starboard cockpit fold away side bench seat, Edson steering wheel, 12V refrigerator, LED trim indicator switch, Diaphragm overboard discharge pump, electric head upgrade. Removable cockpit table. Hardtop grab rails and EZ Loader trailer. Asking price $149,000. Call for more details. Casco Bay Yacht Sales, Freeport, Maine (207) 865-4103; www.cascobayyacht.com.

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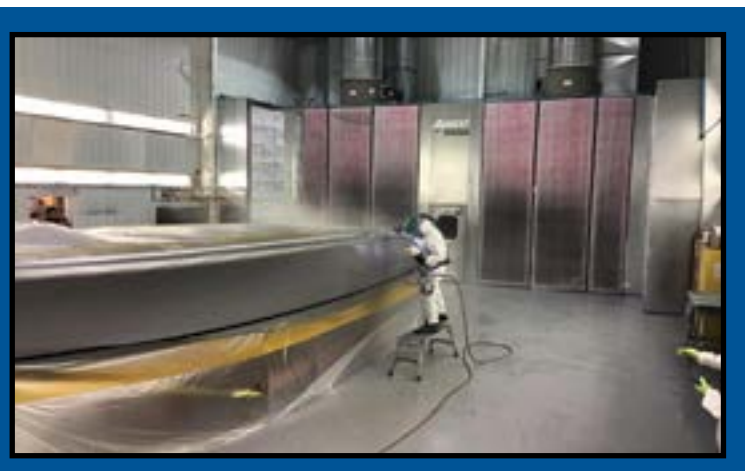

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