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Naval Facilities Engineering Command Atlantic
ATTENTION: Code EV22LL (USWTR OEIS/EIS PM)
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Draft Overseas Environmental Impact Statement/Environmental Impact Statement
for the Proposed Undersea Warfare Training Range

Dear Sir or Madam:

On behalf of Defenders of Wildlife, First Coast Chapter of Surfrider Foundation, Florida Wildlife Federation, Georgia Chapter of the Sierra Club, Georgia Conservancy, North Carolina Wildlife Federation, North Carolinians for Responsible Use of Sonar, Ocean Conservancy, Oceana, Pamlico Tar River Foundation, PenderWatch & Conservancy, and South Carolina Coastal Conservation League, the Southern Environmental Law Center submits these comments on the above-referenced Draft Environmental Impact Statement (DEIS). The organizations appreciate the opportunity to submit comments on the DEIS. We recognize the Navy's important role in ensuring the safety of the country and protecting national security interests. We also value the security a clean, stable and healthy environment provides, and encourage the military's efforts to execute its training goals in a way that protects our valuable natural resources.

I. OVERVIEW

Pursuant to the National Environmental Policy Act (NEPA), the Navy must prepare an Environmental Impact Statement (EIS) for its proposed Undersea Warfare Training Range (USWTR). An EIS must consider all reasonably foreseeable, significant, adverse impacts of the proposed action. 40 C.F.R. § 1502.22. An EIS must consider the cumulative, indirect, and secondary impacts of the proposed action, including reasonably foreseeable expansions in the scope of the proposed action. 40 C.F.R. § 1502.16. An EIS must also consider all reasonable alternatives to the proposed action. 42 U.S.C. § 4332(C)(iii), (E); 40 C.F.R. § 1502.1. Additionally, an EIS must include appropriate mitigation efforts which will avoid or minimize the environmental impacts of the proposed action. 40 C.F.R. § 1502.1, .14(f), .16(h).

Unfortunately, the Navy's DEIS for the USWTR falls significantly short of these NEPA mandates. The Navy has failed to provide a sufficiently detailed or supported assessment of the environmental impacts of the USWTR. The Navy's evaluation of "all reasonably foreseeable adverse impacts" from the USWTR is replete with deficient environmental impact analyses and conclusions unsupported by scientific data. While the DEIS repeatedly asserts that there will be "no significant impact" on marine life from the USWTR, these are purely conclusory assertions, often based on nothing more than speculation and frequently overlooking the best available science.

One of our primary concerns with the DEIS is the Navy's failure to address the USWTR's potentially devastating impact on the North Atlantic right whale, one of the most endangered mammals in the world with a population of less than 400 individuals. Operations within the Jacksonville OPAREA, and within the other proposed OPAREAs in the right whale migratory corridor, present a significant risk to the continued existence of the right whale. As discussed below, the Jacksonville OPAREA contains the only known right whale calving grounds in the world, which has been federally designated as right whale critical habitat and is listed as one of only five "high use" right whale areas. The proposed 470 operations which will take place in the Jacksonville OPAREA, in close proximity to the calving grounds of right whales, may significantly disrupt right whale behavior and heighten the risk of vessel strikes and entanglements to a species that cannot sustain any increase in mortality.

The DEIS also fails to take account of the environmental impacts of the USWTR on other marine mammals, sea turtles, fisheries, and fish habitat. The DEIS similarly fails to adequately assess the impacts of landside construction of the USWTR on manatees, nesting sea turtles, and nesting sea birds.

Moreover, the Navy's analysis of the cumulative impacts of the USWTR is wholly inadequate—failing to (1) examine the combined environmental effects of the USWTR and other related Naval operations; (2) the cumulative acoustic effects of the USWTR's long-term operations; (3) the cumulative impacts of Naval vessels on marine species when analyzed in combination with the anticipated substantial increase of vessel traffic along the Atlantic coast; and (4) the cumulative impact of the large amounts of debris in connection with the USWTR's operations that will be discarded to the sea floor.

We also believe that the Navy has improperly segmented three currently proposed training operations in the region - including the USWTR, the Atlantic Fleet Active Sonar Training, and the Jacksonville Range Complex. These three proposed training programs are interrelated, both operationally and geographically. Rather than conducting three distinct EISs for these three projects, NEPA requires that the Navy prepare a comprehensive EIS analyzing their combined environmental impacts.

Finally, the DEIS's measures intended to mitigate the adverse environmental impacts of the USWTR are egregiously deficient, especially considering the magnitude of risk of a single right whale mortality. The DEIS's mitigation chapter is devoid of substantive, effective measures to address the potential impacts of vessel strikes and the substantial acoustic effects of the USWTR on marine mammals. The DEIS's mitigation measures for both vessel strikes and

acoustic effects are largely based on the presumed effectiveness of Navy personnel's visual observations of marine life. The DEIS blatantly fails to acknowledge that marine life spend a majority of their time submerged, and that visual observation-based mitigation measures are not sufficient to mitigate for the substantial risks inherent in the activities on the USWTR.

In sum, the DEIS fails to provide a meaningful assessment of the environmental impacts of the USWTR, fails to assess the significant cumulative impacts of the USWTR, and fails to offer meaningful mitigation to compensate for those impacts. NEPA requires far more before any proposal to construct the USWTR in the Jacksonville OPAREA, or any of the other proposed OPAREAs, may go forward.

II. DEIS DESCRIPTION OF PROPOSED ACTIONS AND ALTERNATIVES

While NEPA “does not command the agency to favor an environmentally preferable course of action,” an agency must “make[] its decision to proceed with the action after taking a ‘hard look at environmental consequences.’” *Sabine River Authority v. Department of Interior*, 951 F.2d 669, 676 (5th Cir. 1992) (internal citation omitted). Under NEPA, the Navy is obligated to “rigorously explore and objectively evaluate all reasonable alternatives.” 40 CFR § 1502.14(a). On the whole, it is difficult to characterize the Navy's DEIS as taking a “hard look” at the environmental impacts of the USWTR given that, from the outset of its analysis, the Navy's “Site Evaluation Criteria” for choosing the location at which to site the proposed USWTR did not even include environmental impacts of a site as one of many criteria to be considered in site selection. DEIS at 2-27. The flaws stemming from this failure are apparent throughout the DEIS, and most notably in the Navy's proposal to site the USWTR adjacent to the only known calving grounds for the critically endangered right whale.

For the reasons outlined herein, we believe that the Navy's selection of its preferred alternative as the Jacksonville operating area (“Jacksonville OPAREA” or “Site A”) is flawed and fails to satisfy the Navy's legal obligations under NEPA and the Administrative Procedure Act. In addition, we continue to believe that Preferred Alternative C - placement of the USWTR off the southeastern coast of North Carolina - is inappropriate for the reasons discussed in our January 2006 comments on the 2005 DEIS. We hereby incorporate those comments by reference and attach a copy for the record of consideration on the current DEIS.

Finally, we believe that locating the USWTR anywhere within the right whale migration corridor (including South Carolina, proposed Site B) fails to take into account the best available science regarding the biological requirements necessary to ensure survival of the species. While the preferred alternative places USWTR just offshore of right whale calving grounds and in one of only five “high use” areas for the right whale, surveys indicate that mother-calf pairs use the area from Cape Fear North Carolina to South Carolina as a wintering/calving area as well. According to NMFS, it is as important to protect the right whale's migration corridor as it is to protect its seasonal residence areas to avoid collisions. As NMFS notes in the Recovery Plan, while “[i]t may be reasonable to give priority to the protection of the whales and their habitat in known high-use areas, . . . **attention is also needed in the connecting waters between such areas, including waters far offshore**” because “[s]uccessful efforts to protect the whales in areas where they linger for long periods and/or aggregate in relatively high densities could be offset if

the animals were to be exposed to serious risks, such as collision or entanglement, while in transit between such areas.”¹ The mid-Atlantic region is a vital corridor between feeding areas and calving grounds, especially for pregnant females and mother-calf pairs. Considering the poor survival rate for breeding female right whales, it is particularly important that the entire migratory corridor be protected to the maximum extent possible, a recommendation with which several state agencies have concurred when commenting on various Navy proposals for the use of sonar in right whale habitat.²

III. DEIS DESCRIPTION OF AFFECTED ENVIRONMENT AND ANALYSIS OF IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

NEPA imposes an affirmative obligation to seek out information concerning the environmental consequences of proposed federal actions. *National Audubon Society, v. U.S. Department of the Navy*, 422 F.3d 174 (4th Cir. 2005). “The sweeping policy goals announced in § 101 of NEPA are thus realized through a set of ‘action-forcing’ procedures that require that agencies take a ‘hard look’ at environmental consequences, and that provide for broad dissemination of relevant environmental information.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989) (internal citations omitted). The Navy has failed to conduct that “hard look” necessary to thoroughly examine the many environmental consequences of its proposed action.

A. Whales

The DEIS acknowledges that a number of whale species, including the highly endangered right whale, exist in the Jacksonville OPAREA. Despite acknowledging the presence of many whales species, however, the Navy fails to adequately assess the environmental impacts of USWTR on these species, including the impacts from ship strikes, entanglements, and the use of various sources of mid-frequency sonar on the training range.

The very existence of the North Atlantic right whale, *Eubalaena glacialis*, is imperiled by a variety of threats from human activity, and scientists have warned that the likelihood of the species’ extinction is imminent. Extreme caution and a variety of measures are urgently needed to ensure the species’ survival.³ As the National Marine Fisheries Service (NMFS) has stated, the loss of even one whale from the small existing population from non-natural causes could push the species over the brink of extinction.⁴ The current status of this species is so tenuous

¹ NMFS, Recovery Plan for the North Atlantic Right Whale (revised August 2004) at I-C2 (emphasis added).

² See Letter from Mary Anne Poole, Florida Fish and Wildlife Commission to Naval Facilities Engineering Command Atlantic, January 26, 2006 [hereinafter Florida Fish and Wildlife Letter](recommending that “[b]ased on the endangered status of the right whale and the importance of protecting their habitat along the U.S. eastern coast, [Florida’s] preferred alternative for this project is the ‘No Action’ alternative.”); Letter from Noel Holcomb, Georgia Department of Natural Resources to Naval Facilities Engineering Command, March 31, 2008 [hereinafter Georgia DNR Letter] (requesting that, on the Navy’s proposal to conduct Atlantic Fleet Active Sonar Training (“AFAST”) off the southeastern coast, the Navy “avoid conducting AFAST exercises within all areas of known right whale occurrence to the maximum extent possible” and questioning the Navy’s alternatives analysis “given how little is known about the distribution and abundance of many marine mammal species inhabiting the project area”).

³ Kraus, S.D., et al., North Atlantic Right Whales in Crisis, *Science*, July 22, 2005.

⁴ See NMFS 2003 Stock Assessment Report, available at <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

that NMFS has determined the annual allowable removal levels (potential biological removal, or “PBR”) for the right whale is *zero*.⁵ As NMFS states in its 2003 Stock Assessment Report, “[t]he total level of human-caused mortality and serious injury is unknown, but reported human-caused mortality and serious injury has been a minimum of 2.07 through 2001.” Thus, human-caused harm to right whales since 1994 (when the PBR concept was developed) has consistently exceeded acceptable levels. In proposing to locate the USWTR near right whale critical habitat, the Navy ignores the best available science on impacts to right whales from ship strikes, entanglements, and sonar, and unjustifiably dismisses the risks the proposed training range poses to the survival of the species (as well as the potential harms to other marine mammal species).

Ship Strikes

The DEIS fails to propose appropriate measures to ensure that ship strikes of whales are minimized. As noted in the DEIS, fin whales, humpback whales, and sperm whales are all commonly or frequently hit by vessels, and all are present in the Jacksonville OPAREA during at least some portion of the year. Moreover, as NMFS has noted, the greatest known cause of right whale mortality in the western region of the North Atlantic is collision with ships. Of the 50 dead right whales reported since 1986, at least 19 were killed by vessel collisions.⁶ In the 16-month period between February 2004 and May 2005, there were eight recorded deaths of right whales, including six adult females, three of which were carrying near-term fetuses. *Id.* Three of these eight whales were definitely killed by ships, a fourth was probably killed by a ship, a fifth whale was killed by fishing gear, two whales were offshore and could not be recovered for examination, and a young calf died on the beach in Florida. *Id.* The negative trend for right whales continued during the 2006 calving season, in which five whales were recorded as killed or injured as a result of vessel collisions and entanglements with fishing gear. *Id.* The loss of this number of whales, particularly this number of reproductively mature females, has been described as unprecedented in the 25 years that this species has been studied. *Id.*

In addition to documented mortalities in this population, many right whales that survive the initial encounter with a vessel suffer serious, chronic injuries that can lead to slow deterioration and eventually disappearance from the population (the carcasses of these chronically injured whales are typically not found as these animals become emaciated and sink when they die). Thus, mortalities caused by ship strikes are likely underestimated.

The law requires the Navy to evaluate all “reasonably foreseeable” impacts, which, by definition includes “impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.” 42 C.F.R. § 1502.22. While the DEIS acknowledges that the critically endangered right whale and other whale species will be present in the Jacksonville OPAREA, it fails to fairly assess the likelihood of ship strikes during both transit to and from the training range, and during operations on the training range.

⁵ NMFS 2007 Stock Assessment Report at 10, available at <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

⁶ Kraus, S.D., et. al, *supra* note 3, at 561. Other threats to the species include fishing gear entanglements, habitat degradation, noise, contaminants, underwater bombing activities, climate and ecosystem change, and commercial exploitation.

As the Florida Fish and Wildlife Conservation Commission noted in its comments on the 2005 USWTR DEIS, locating the training range off the coast of Jacksonville will contribute to increased vessel traffic along the eastern seaboard, and more specifically, in right whale calving ground.⁷ The DEIS is unfettered by concerns about this increased traffic, and simply insists that collisions with marine mammals are not expected given the presence of Naval lookouts that will detect whales (and other unspecified “reasonable and prudent actions to avoid the close interaction of Navy assets and marine mammals”). *See* DEIS at 4.2-28.

In concluding that collisions with whales are “not expected” in the Jacksonville OPAREA, the Navy places undue weight on the notion that trained Naval lookouts will be onboard all vessels and will be able to “detect all objects on the surface of the water, including marine mammals and sea turtles.” *Id.* A number of factors - including visibility, wave height, and the frequency of whale surfacings - influence the Navy’s ability to adequately see and avoid collisions with marine mammals during transit and operations. The DEIS fails to note these limitations, instead repeatedly touting lookouts as the prevailing means to avoid collisions with whales.

The DEIS’s unsupported reliance on lookouts as the predominant means to avoiding collisions with whales is belied by NMFS’s recent statements regarding the effectiveness of such lookouts in spotting right whales:

The ability of posted lookouts . . . to detect whales is limited by the difficulty of: (1) Observing animals in low/no light conditions (e.g., night); (2) observing animals in sea states greater than Beaufort 3-4; and (3) observing whales beneath the surface (where they spend most of their time). ***Right whales rarely break the surface and their backs are black or dark grey, making them difficult to spot even under ideal conditions.***

See 73 Fed. Reg. 60173, 60182 (Oct. 10, 2008) (emphasis added). The State of Georgia’s Department of Natural Resources has similarly pointed out the flaws in the Navy’s reliance on lookouts, noting that “[r]ight whales spend the majority of their time subsurface, making them difficult to detect visually.”⁸ Likewise, in comments on the 2005 DEIS, the Florida Fish and Wildlife Conservation Commission pointed out that “[t]he amount of dive time in conjunction with weather/visibility issues . . . will limit the ability of observers to detect marine mammals” and that right whales can be more difficult to spot from a ship than other cetaceans because they lack a dorsal fin.⁹ As an example of the problems inherent in spotting right whales, in 1993, despite good weather and a calm ocean, experienced operators of an eighty-two foot long Coast Guard vessel failed to spot a right whale calf, and struck and killed it off the coast of St. Augustine, Florida.¹⁰

⁷ *See* Florida Fish and Wildlife Letter, *supra* note 2, at 3.

⁸ *See* Georgia DNR Letter, *supra* note 2, at 2.

⁹ *See* Florida Fish and Wildlife Letter, *supra* note 2, at 2-3.

¹⁰ Written Testimony of Amy Knowlton, *Center for a Sustainable Coast, et al., v. Georgia Department of Natural Resources*, Georgia Office of Administrative Hearings, Docket No. BNR-CM-05-26576-6-Malihi at ¶ 18.

The DEIS also fails to consider the possibility of strikes by sub-surface submarines during transit and/or operations. The DEIS never mentions strikes by submarines as a source of possible impacts to whales or explains how these potential strikes will be minimized in the absence of lookouts.

Likewise, the DEIS fails to adopt adequate vessel speed restrictions. The DEIS discloses that Naval ships typically transit at speeds between 15 and 17 knots, DEIS at 2-35, speeds that NMFS has found to be fatal to right whales that are struck in its recent Ship Strikes rule. *See* 73 Fed. Reg. 198 at 60173-60191. NMFS has explicitly requested that exempt federal agencies, such as the Navy, voluntarily observe a 10-knot speed limit in areas of right whale presence when the agency's missions will not be compromised. The DEIS's failure to propose a 10-knot speed limit for vessels in transit to the training range from King's Bay and Mayport flies in the face of the best available science regarding the avoidance of right whale ship strikes and NMFS's request that federal vessels observe a 10-knot limit whenever possible.

Finally, the DEIS fails to adequately explain how ship strikes will be minimized during range installation and instrumentation. While the DEIS acknowledges that the trunk cable will be buried through right whale critical habitat and operations will be curtailed during the calving season, there is no consideration of calving activities taking place outside of the critical habitat. Moreover, the DEIS does not elaborate on how collisions with right whales (or other whale species that are present) will be minimized during the construction period, when presumably many ships and pieces of construction equipment will be transiting the critical habitat and operating to bury cable in the areas surrounding the critical habitat. The DEIS simply states that because the construction period for installing cable is of limited duration at each location, there will be a limited period during which vessels and construction equipment could come into contact with right whales. Under NEPA, the Navy is obligated to assess the impacts of any possible collisions with whales during this period, and the DEIS wholeheartedly fails to do so.

Entanglements

Scientific evidence suggests that the average rate of serious injuries to right whales caused by entanglements has been increasing in recent years, and that today, entanglements cause from 10% to upwards of 30% of right whale deaths.¹¹ In the DEIS, however, the Navy concludes that there will be no significant impact to whales from possible entanglement in torpedo control wires, air launch accessories, or parachute lines that remain in the waters of the USWTR after training operations are completed. This conclusion is flawed, unsupported by any evidence, and must be reconsidered.

With respect to control wires, the DEIS concludes that "a marine mammal . . . would be vulnerable to entanglement only if its diving and feeding patterns place it in contact with the bottom." DEIS at 4.2-24. Scientific evidence suggests that right whales do dive and feed in

¹¹ Knowlton, A.R. and Kraus, S.D., Mortality and Serious Injury on Northern Right Whales (*Eubalaena glacialis*) in the Western North Atlantic Ocean, *Journal of Cetacean Research and Management*, 2001; Johnson, T., Entanglements: The Intertwined Fates of Whales and Fishermen, 2005, at 289. University Press: Gainesville, FL.

contact with the bottom, as explained in the scientific literature¹² and as photographically documented in a recent *National Geographic* article.¹³ The Navy does not consider this evidence nor explain the basis for its apparent conclusion that right whales will not dive or feed in contact with the bottom.

The Navy also unjustifiably dismisses the risk of potential whale entanglement in parachutes and parachute lines deployed from aircraft-launched EMATTs, lightweight torpedoes, sonobuoys, and ship-launched VLAs. The DEIS acknowledges that if bottom currents are present, parachute canopies may billow and pose an entanglement threat to marine mammals in close proximity to the bottom. However, the Navy concludes that the probability for a marine mammal to become entangled in this debris is low. The DEIS provides no scientific justification for this conclusion, except that parachute assemblies are “expected to lay flat on the seafloor, as observed at other locations.” DEIS at 4.2-32. Given that the DEIS admits that these canopies may billow and pose an entanglement threat, the Navy cannot simply dismiss the risk of entanglement as “unlikely” based on its unsupported expectation that the assemblies will lay flat on the seafloor once they reach the bottom. *Id.*

The Navy’s conclusion that there would be no significant impact to marine mammals from air launch accessories associated with torpedo activities on the USWTR is similarly unsupported. As with parachutes, the DEIS admits that air stabilizer canopies from torpedoes may billow in the presence of ocean currents, and would thus potentially pose an entanglement threat. The DEIS dismisses this threat on the basis that the canopy is “large and highly visible compared to materials such as gill nets and nylon fishing line in which animals may become entangled.” DEIS at 4.2-25. The DEIS fails to cite data suggesting that marine mammals are able to see and avoid entanglement in materials comparable to the canopies or suspension lines deployed. Moreover, even entanglements that are not initially lethal must be adequately considered, as NMFS notes that these sorts of entanglements may result in a gradual weakening of entangled individuals and render them more susceptible to other direct causes of mortality.¹⁴ In conclusion, the Navy has not complied with the requirements of NEPA in assessing the entanglement risk to marine mammals presented by control wires, parachutes and parachute lines, and air launch accessories.

Aircraft Noise

The DEIS also fails to properly assess the possibility of harassment of right whales from increased aircraft traffic and noise. Scientific evidence suggests that noise from low-altitude aircrafts—such as helicopters and fixed wing aircrafts that will be used in several of the proposed training scenarios—can cause behavioral modifications in whales.¹⁵ One such

¹² Maresh, Jennifer L., Analysis of North Atlantic Right Whale Swimming Behavior During Bottom Foraging Events to Assess Entanglement Risk, available at <http://dukespace.lib.duke.edu/dspace/bitstream/10161/232/1/Maresh%20MP%202005.pdf>.

¹³ See “Right Whales On the Brink, On the Reboard”, *National Geographic*, October 2008, available at <http://ngm.nationalgeographic.com/2008/10/right-whales/chadwick-text>.

¹⁴ Recovery Plan for the North Atlantic Right, *supra* note 1, at IG-2.

¹⁵ Nowacek, D.P., M.P. Johnson, and P.L. Tyack. 2004. North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli. *Proceedings of the Royal Society of London, Series B, Biological Sciences* 271:227-31.

behavioral modification noted in the scientific literature is separation of mothers and calves.¹⁶ The DEIS fails to address this potential behavioral modification, instead simply noting that, because Naval aircraft will fly quickly over the water, “the noise produced by aircraft overflight would have little or no effect on marine mammals at the water’s surface.” DEIS at 4.3-140. The DEIS’s unjustifiable dismissal of the potential impact to right whales from Navy overflights is of major concern given that repeated overflights will occur directly over right whale critical habitat during the calving season.

Acoustic Effects

Other organizations, such as the Natural Resources Defense Council, have developed particular expertise in understanding the impacts of sonar on marine life, especially whales, and have shared this expertise with the Navy in their own comments. We will not attempt to duplicate their substantial efforts here, but wish to raise a few points for consideration.

First, the effects of sonar on marine mammals, and in particular on right whales and their calves, is poorly understood.¹⁷ Refined information on the impacts of sonar on whales and their likely behavioral responses is critical to understanding, evaluating, and mitigating the likely impacts of sonar. This is particularly true, where, as here, the Navy acknowledges that sonar activities have the potential to cause level B harassment in as many as 48 right whales, and 108 humpback whales. This level of harassment includes the disruption of behavioral patterns including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behavioral patterns are abandoned or significantly altered. Given that this degree of harassment could impact breeding and/or nursing behavior in up to 48 whales, the Navy’s conclusion that exposure of right whales to sonar in the Jacksonville OPAREA will result in only short-term effects to individuals exposed and will likely not affect rates of recruitment or survival is specious. Moreover, the Navy’s assessment that Level B harassment may occur, but will not harm the survival of the species, appears contrary to the best available science regarding species’ survival, which notes that the loss of even two breeding females may ensure the extinction of the species.¹⁸ Finally, the very levels of sound that the Navy relies upon to assess the impacts of sound exposure are questionable. For example, Nowacek, et al. (2004), found that right whales exposed to an artificial signal from 500-4500 Hz exhibited altered swimming and diving profiles.¹⁹ These scientists predicted that the signals would likely disrupt feeding behavior at received levels of 133-148 dB re 1uPa, much lower than the Navy’s identified threshold for behavioral harassment. DEIS at 4.3-25. As with right whales, the Navy’s conclusion that humpback whales will only be subject to 108 Level B harassments and that these harassments will not affect annual rates of recruitment or survival is also circumspect.

As an example of the potential impacts of sound on whales, studies have shown that beaked whales are particularly sensitive to sound and vulnerable to its effects. Sonar, including

¹⁶ *Id.*

¹⁷ *See, e.g.*, Georgia DNR Letter, *supra* note 2, at 1 (noting that the mechanism that produces mortality or/morbidity as a result of sonar is uncertain).

¹⁸ Caswell, H., et al., 1999. Declining survival probability threatens the North Atlantic right whale. *Proceedings of the National Academy of Sciences USA* 96: 3308-3313.

¹⁹ *See* Nowacek, et al. (2004), *supra* note 15.

mid-frequency sonar, appears to pose a serious threat to these marine mammals. According to Fernandez, et al. (2005), there have been eight reported mass strandings of beaked whales subsequent to naval sonar operations. These scientists caution that little research has been conducted to investigate the non-auditory impacts of sound exposure to marine mammals; their studies documented “marked congestion of all organs,” including hemorrhaging and congestion in the lungs, liver fibrosis, and vascular congestion and hemorrhaging in the brain. Significantly, these scientists observed that the impacts from sound exposure may take place at much lower received sound levels and at much farther distances than models would predict. This hypothesis was based on their observation of the distance of many of the stranded animals from the sonar events that were associated with the impacts.²⁰

The Navy also fails to consider the possibility that whales may be affected by sonar at a significant distance from the source, not just when they are present on the USWTR. Past stranding events demonstrate that even mid-frequency sonar may propagate far enough to cause behavioral modifications in mammals far away from the source, yet the Navy’s estimates of harassment levels only report the number of mammals that will be harassed on the USWTR. This limited analysis arbitrarily disregards evidence obtained from a study of other stranding events.

Finally, the Navy fails to consider the potential cumulative impacts from multiple sound exposures. A study jointly conducted by the Navy and NMFS states that research on temporary threshold shifts from multiple sound exposures is being conducted, and cautions that “the precise relationship between TTS onset for comparable SEL values from either single or multiple exposures is unknown.”²¹ Over time, multiple exposures could lead to impaired hearing abilities, as studies on the effects of sound on terrestrial mammals has shown. Perhaps even more relevant, if feeding behavior is disrupted repeatedly and is combined with other noise events that mask communications among whales or interfere with a whale’s navigational abilities, the cumulative effects of multiple sound exposures and disruptions could prove fatal. This is of particular concern with regard to right whales. As NMFS has stated, the loss of even one animal from the small existing population from non-natural causes could push the species over the brink of extinction.²² Considerably more investigation and analysis is warranted before taking further action.

On the whole, the DEIS dangerously dismisses the potential for adverse impacts to the right whale whose continued existence is imperiled by a variety of threats from human activity. The right whale is among the rarest and most endangered of all whales and marine mammal species, and a collection of scientists has warned that the likelihood of the species’ extinction is imminent. Extreme caution and a variety of measures are urgently needed to ensure the species’ survival,²³ and the DEIS fails to adopt such measures or fairly assess the potential impacts from

²⁰ Fernandez, A., et al., Gas and Fat Embolic Syndrom Involving a Mass Stranding of Beaked Whales (Family *Ziphiidae*) Exposed to Anthropogenic Sonar Signals, *Vet. Pathol.* 42:446-457 (2005); *see also* P. D. Jepson, et al., *Nature* 425, 575-576 (2003).

²¹ NMFS, Office of Protected Resources, Assessment of Acoustic Exposures on Marine Mammals in Conjunction with *USS Shoup* Active Sonar Transmissions in the Eastern Strait of San Juan de Fuca and Haro Strait, Washington, January 21, 2005 [hereinafter NMFS Assessment of Acoustic Exposures on Marine Mammals].

²² *See* NMFS 2003 Stock Assessment Report, *supra* note 4.

²³ Kraus, et al., *supra* note 3.

the Navy's proposed actions. Despite the paucity of data and the cautionary notes of expert scientists, the Navy presents its determination of "no adverse effect" with a degree of confidence that cannot be justified.

B. Dolphins

The Navy's proposal for the USWTR raises serious concerns about potential impacts to bottlenose dolphins (as well as other species of dolphins and porpoises). Currently, bycatch of coastal migratory dolphins exceeds the allowable removal levels (potential biological removal, or PBR). Because the population is declining, the coastal migratory stock is now listed as depleted pursuant to the Marine Mammal Protection Act, and the National Oceanic and Atmospheric Administration (NOAA) has implemented a Take Reduction Plan for the stock. *See* 71 Fed. Reg. 24,776 (April 26, 2006). In the DEIS, the Navy assumes that all bottlenose dolphins occurring on the Site A USWTR will be from the western North Atlantic offshore stock, and not from the coastal migratory stock. DEIS at 4.3-93. This assumption is unsupported by science, as it remains unclear how the offshore and coastal stocks are distributed and whether there is significant mixing between these stocks. For example, in NMFS's Environmental Assessment for its Take Reduction Plan, the Agency discusses the "significant overlap between the two morphotypes [coastal and offshore] in the southern region during summer months."²⁴ The Take Reduction Plan also cites an example of a coastal morphotype bottlenose dolphin found well offshore of Georgia, at a distance of 60 nautical miles from shore, and a depth of 125 feet.²⁵ Given these data disparities, NMFS notes that further research is required in southeastern waters to better understand the stock structure and to determine whether mixing between the coastal and offshore migratory stocks is occurring.²⁶ The DEIS's assumption that all impacts on dolphins will be to the western North Atlantic offshore stock ignores the possibility that dolphins from the coastal migratory stock will be present within the Jacksonville OPAREA and potentially affected by impacts that extend beyond the boundaries of the training zone (e.g., sonar, increased vessel traffic, etc.). This is a significant flaw in the Navy's analysis and fails to satisfy the requirements of NEPA.

Should dolphins from the coastal migratory stock be present on or near the USWTR, the Navy's plan to discard parachutes and assemblage within the USWTR are at odds with the proposed measures in the Take Reduction Plan for the coastal migratory stock, which are designed to reduce entanglement in fishing nets and lines and thereby reduce mortality. As discussed above in regards to potential whale entanglements, the parachutes present risks of entanglement similar to those of coastal gill nets, and the assemblage poses hazards comparable to those posed by fishing lines. We encourage the Navy to reexamine these measures to better account for potential impacts on bottlenose dolphins.

In addition to potential entanglements, the DEIS discloses that there would be four incidences of level A harassments to bottlenose dolphins and over 50,000 incidents of behavioral disruptions (level B harassments) to bottlenose dolphins from exposure to sonar activities on the

²⁴ NMFS Environmental Assessment for the Take Reduction Plan at 29, available at http://www.nmfs.noaa.gov/pr/pdfs/interactions/bdtrp_ea.pdf.

²⁵ *Id.*

²⁶ *Id.*

range. DEIS at 4.3-93. First, with respect to the expected level A harassments, the Navy does not explain how these harassments will occur and whether they are preventable. With respect to the over 50,000 behavioral disruptions, the Navy concludes that this level B harassment will not impact annual rates of recruitment or survival, but does not explain how it reaches this conclusion based on the best available science. The DEIS fails to explain what sorts of behavioral disruptions are expected (except one example, that exposure to sonar could result in impaired communication between mother and calf pairs). The DEIS also fails to discuss the potential that this level B harassment could result in avoidance behavior, despite scientific evidence that longer term or chronic displacement for some dolphin groups may occur in response to sound.²⁷ The DEIS explains that mitigation measures will reduce the actual incidents of behavioral disruption, but fails to specify what mitigation measures are targeted at reducing impacts to bottlenose dolphins. This is particularly problematic because the primary mitigation measure the Navy proposes – the use of observers to spot marine mammals – is not a reliable means to determine whether dolphins are present anywhere within the training range (a 500 nautical mile area) or the geographic area that may be impacted by sonar activities due to the limitations of observers discussed above in regards to ship strikes.

C. Turtles

The Southern Environmental Law Center hereby incorporates by reference the submitted comments of the Duke Environmental Law and Policy Clinic at the Duke University Law School and the Karen Beasley SeaTurtle Rehabilitation and Rescue Center with regard to the impact of the proposed USWTR on sea turtles. In addition, we offer the following observations regarding flaws in the DEIS with respect to the analysis of impacts to sea turtles, which undermine the Navy's conclusion that its activities will not have a significant impact on turtles or cause a taking of turtles pursuant to the ESA.

Range Instrumentation

First, while the DEIS acknowledges that certain species of sea turtles – the green, loggerhead, and Kemp's ridley – are associated with ocean bottom habitats and may "brumate" (e.g., hibernate by burying themselves into the bottom during cold periods) in the Jacksonville OPAREA, the DEIS does not evaluate the potential disturbance of construction activities on brumating turtles. The DEIS draws the unsupported conclusion that because the construction period for installing cable is of limited duration, there is a limited period during which brumating sea turtles could be disturbed. NEPA requires an analysis of all environmental impacts, even impacts of a limited duration. The DEIS goes on to speculate that because the construction equipment is narrow in width, there is "an extremely low probability that installation equipment would come into direct contact with any turtle that may be in or on bottom sediments." DEIS at 4.2-21. This conclusion is wholly unsupported by evidence. Similarly, the DEIS's suggestion that sea turtles will move out of the area at the approach of installation equipment lacks any scientific support. The brumation of sea turtles is poorly understood, and the DEIS fails to provide any data suggesting that buried sea turtles are likely to hear and avoid disturbances. Finally, the DEIS's conclusion that there will be no permanent loss of bottom habitat because the

²⁷ See, e.g., NMFS Assessment of Acoustic Exposures on Marine Mammals, *supra* note 21; DEIS at 4.3-18 (citing the Haviland-Howell and Miksis-Olds studies re: chronic displacement).

impacts on bottom sediments during range installation and instrumentation will be temporary is wholly unsupported and speculative.

Entanglement Risk

With respect to entanglement risk, the Navy's assertion that turtles will not become entangled in control wires, torpedo air launch accessories, and parachute lines or ingest the air launch debris or parachutes must be reconsidered. As demonstrated by entanglement in Fish Aggregating Devices (FADs) in the eastern Tropical Pacific, sea turtles are attracted to floating debris. Debris, particularly parachutes and air launch canopies, dropped and abandoned by the Navy will harm endangered sea turtles, potentially negating efforts to stabilize populations and promote the recovery of the several species. This finding is echoed by scientists and NMFS's warning that marine debris is one of the most pressing threats to marine turtles.²⁸ Moreover, parachutes in deep water likely would mimic the action of gill nets, which balloon outward and pose a particular hazard to sea turtles.²⁹ As discussed above in regards to potential marine mammal entanglement, the DEIS notes that air launch accessories and parachutes may billow and may present an entanglement risk, but dismisses the chances of turtles becoming entangled as "unlikely" without an adequate explanation. DEIS at 4.2-25; 4.2-31. With respect to air launch accessories, the DEIS suggests that entanglement risk is unlikely because the air launch accessory is large and highly visible, but fails to provide any scientific support for the notion that turtles avoid entanglement when marine debris is visible. With respect to control wires and parachutes, the DEIS appears to find entanglement risk to be unlikely on the basis that sea turtles are not likely to be diving and feeding on the bottom, which wholly ignores the basic life history of some species, such as loggerheads, which frequently dive and feed on the bottom.³⁰

NMFS's Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle reported that the northern subpopulation of loggerheads (which occurs from North Carolina south to northeast Florida) is declining, and that the primary causes of strandings and mortality are entanglements, marine debris, and pollution.³¹ NMFS determined that "this level of mortality [is] 'severely impacting the northern nesting subpopulation of loggerheads.'"³² This

²⁸ Laist, D.W., Overview of the biological effects of lost and discarded plastic debris in the marine environment, 18 Marine Pollution Bulletin No. 6B (1987); NOAA Fisheries, Threats to Marine Turtles, available at <http://www.nmfs.noaa.gov/pr/species/turtles/threats.htm>.

²⁹ Assessment Update for the Kemp's Ridley and Loggerhead Sea Turtle Populations in the Western North Atlantic, A Report of the Turtle Expert Working Group, NOAA Technical Memorandum NMFS-SEFSC-444 (Nov. 2000), at 71-75 [hereinafter Turtle Expert Working Group Report].

³⁰ See National Marine Fisheries Service and U.S. Fish and Wildlife Service. Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (*Caretta*), Second Revision, at 23, 48. National Marine Fisheries Service, Silver Spring, MD, available at <http://www.nmfs.noaa.gov/pr/recovery/plans.htm> [hereinafter Recovery Plan for the Loggerhead Sea Turtle]; see also Georgia State Parks (http://www.gastateparks.org/content/Georgia/parks/education/Loggerhead_SeaTurtle.doc) ("Loggerheads return to coastal waters of the southeastern United States at an estimated age of 12 years and approximate carapace length of 16-18 inches. During this coastal phase, loggerheads are bottom dwellers and feed on mollusks, crabs and other invertebrates.").

³¹ See Recovery Plan for the Loggerhead Sea Turtle, *supra* note 30, at vii; see also Turtle Expert Working Group Report, *supra* note 29, at 73-74; Marsh, et al., Strategies for Conserving Marine Mammals (conference paper 2001); see also 69 Fed. Reg. 65127, 65136 (Nov. 10, 2004).

³² Turtle Expert Working Group Report, *supra* note 29, at 74.

assessment raises particular concern, as pelagic juveniles, which are key to the recovery of the subpopulation, may be found in the region proposed for the preferred Site A USWTR. The DEIS acknowledges as much, noting that loggerhead nesting occurs along almost the entire coastline adjacent to the Jacksonville OPAREA and that several locations in this area are high-density nesting beaches. DEIS at 3.2-37. Despite this data, however, the DEIS fails to propose adequate measures to avoid entanglement risk, one of the primary causes of loggerhead mortality and population decline.

Acoustic Effects

The Navy asserts that sea turtles have limited hearing abilities and thus will not experience adverse effects from the use of sonar in the USWTR. However, these assertions are unsubstantiated. The scientific evidence of the hearing abilities of sea turtles and the impact of anthropogenic noise sources is limited. Moreover, sea turtles spend most of their time underwater,³³ heightening concerns about the impacts of sonar on turtle behavior and mortality. The Navy is obligated to collect and publicize additional information about the potential impacts of sonar on sea turtles, as little evidence of impact does not necessitate a conclusion that there is no actual impact.

Most of the research on sea turtles has addressed nesting animals; according to Epperly, et al., limited in-water research exists. It is therefore unsurprising that NMFS and the TEWG state that additional data and action are urgently needed to better protect loggerhead sea turtles and ensure the species' survival. The Navy should not proceed with current plans for the USWTR until this urgent need is met and a better understanding of the potential impacts of the USWTR can be made.

D. Fish and Fish Habitat

The DEIS fails to adequately address the impacts to fish and fish habitat that may occur from range instrumentation, marine debris expended on the range, and sonar activities.

Range Installation

First, the DEIS concludes that there will be no lethal or long-term impacts on fish assemblages at any of the proposed USWTR sites during the placement of transducers and interconnect cables, or the burial of the trunk cable from the mainland to the training range. This conclusion is devoid of any analysis or support, and is wholly speculative. The Navy must do a more complete analysis before it can reach this conclusion with any certainty.

With respect to the impacts on essential fish habitat, the DEIS discloses that the burial of the interconnect cables would impact hard bottom essential fish habitat by "crushing, covering, or cutting through the hard bottom substrate", and that these activities would "disturb hard bottom substrate EFH and benthic species substrate." DEIS at 4.2-5 to -7. Likewise, the DEIS discloses that the installation activities could harm biogenic reef communities that colonize on hard bottoms. Given that these installation activities reduce the quality and quantity of hard

³³ Epperly, et al., Sea turtles in North Carolina waters, 9 Conservation Biology 2, 384-394 (April 1995).

bottom EFH and reef communities in the area and clearly constitute a significant impact, consultation with NMFS is required. *See* 16 U.S.C. § 1855(b)(2). The DEIS does not indicate whether such consultation has begun. Moreover, the DEIS must fully assess the impacts to EFH and offer mitigation measures to compensate for the loss of habitat. The DEIS is devoid of any explanation of the nature of the impacts and how they will affect the larger ecosystem, and fails to explain what mitigation measures will be employed to reduce the impacts. All of the mitigation measures in the “Mitigation Related to Cable Installation at Sea section” center on mitigating the harm to marine mammals and sea turtles, and not to mitigating for the loss of hard bottom habitats. DEIS at 6-22.

Marine Protected Area for Snapper Grouper

For several years, the South Atlantic Fisheries Management Council (SAFMC) has pursued the use of Marine Protected Areas (MPAs) as a tool for management of species in the Snapper Grouper complex. Recently, the SAFMC designated the North Florida MPA, which lies fully within the Navy’s proposed USWTR Site A. The purpose of this MPA is to allow deepwater snapper-grouper species to “reach their natural size and age, protect spawning locations, and provide a refuge for early developmental stages of fish species.”³⁴ The installation and operation of the USWTR – with all of the associated increased activity and debris – is fundamentally incompatible with the goals of the MPA, and could wholly negate the success of this fisheries management tool. As such, further analysis and investigation of the impacts on the North Florida MPA is required, and any final decision to locate the USWTR directly over this MPA may require significant mitigation by the Navy. We understand that the Navy has initiated “coordination” with NMFS regarding minimization of impacts on this area, and we urge that NMFS and the Navy undergo a careful review of whether siting the USWTR over this newly-designated MPA is a sound decision.

Debris: Exercise Torpedoes, Sonobuoys, Parachutes and their Assemblages, and Ballast

The DEIS also concludes that over 130 XBTs, 6,400 sonobuoys, and 33 ADCs expended on the range will present no significant impact to bottom sediments. DEIS at 4.1-9. The DEIS states that it will take roughly two million years to cover the bottom with sonobuoys and is thus a minimal impact. DEIS at 4.1-6. This analysis misses the mark and fails to satisfy NEPA by overlooking the potential impact the expended sonobuoys will have on the quality of the habitat (and not just the quantity or percentage of habitat impacted). The DEIS also fails to present data supporting its conclusion that the sonobuoys will eventually “degrade, corrode, and become incorporated into the sediments over time.” *Id.* There is no meaningful way to assess the validity of this statement given its lack of empirical support.

The primary source of adverse impacts to hardbottom and corals from the Navy’s proposed action that is not discussed in the DEIS is the debris the Navy intends to leave behind, including parachutes and their assemblage and ballast. Parachutes can be carried thousands of miles by winds and currents and may settle on the ocean floor.³⁵ If parachutes and their

³⁴ South Atlantic Fisheries Management Council, Public Hearing Document for Amendment 14 at 5, available at <http://www.safmc.net/MPAInformationPage/tabid/469/Default.aspx>.

³⁵ Marsh, et al., *Strategies for Conserving Marine Mammals* (conference paper 2001).

assemblage settle on corals or hardbottom, they can break off large pieces of coral or drown species within the area. Failure to recover equipment that could entangle marine resources conflicts with measures SAFMC has adopted to protect Essential Fish Habitat and Habitat Areas of Particular Concern.

Similarly, ballast that drops on corals can break off large chunks, degrading and harming the habitat. Ballast can also leach lead and other toxins, potentially destroying sections of coral and hardbottom. It is significant that the DEIS discusses only the predicted dilution of these toxins to conclude they pose no threat to marine water quality; omitted from the analysis are impacts these toxins may have on small yet important areas of coral and hardbottom. Among the protective measures SAFMC has adopted to protect corals and hardbottom habitat is a prohibition on the use of any toxic chemicals. The Navy must explain why it has ignored this protective measure.

Acoustics

As with many other sections of the DEIS, the analysis of the impacts of sonar activities on fish species asks the public to accept the premise that a lack of data on the effects of sonar equates to no impacts on marine species. In the Navy's own words, "the extent of data, and particularly scientifically peer-reviewed data, on the effects of high intensity sounds on fish is exceedingly limited." DEIS at 4.3-145. Nonetheless, the Navy somehow concludes with certainty that there will be no significant impact to fish populations as a result of active sonar activities at any of the proposed USWTR sites. DEIS at 4.3-146. This sort of analysis flies in the face of NEPA's "hard-look" requirement, and the Navy's unqualified "no significant harm" finding is unjustified.

E. Landside Impacts

The DEIS's analysis of landside impacts also falls short of satisfying NEPA's "hard look" requirement. We are particularly concerned with the Navy's justification of no impact to the threatened and endangered sea turtles nesting in the landfall site area and manatees located in the nearshore waters. The Navy concludes that the installation of the cable connecting the USWTR to land and the construction of the cable termination facility will have no adverse impacts on these species due to the temporary nature of the construction. Yet, if the construction occurs during the nesting months of sea turtles, it could have significant adverse impacts on the nesting activities. Without sufficient detail of mitigation measures, the DEIS merely states that the Navy will consult with USFWS and that current existing conservation measures would "minimize or eliminate the potential for adverse impact." DEIS 4.6-3. The DEIS makes no attempt to analyze the sufficiency and success of these measures, which merely include marking known nesting areas and avoiding disturbance of these areas. DEIS 6-20. There is no discussion of whether construction-related sounds will have an adverse impact on the sea turtles' nesting activities. The lack of mitigation and a sound analysis of impacts is particularly troubling given recent estimates of a decline in loggerhead nesting in Florida. According to data from the Florida Fish and Wildlife Conservation Commission, the number of loggerhead nests in Florida

has declined approximately 40% since 1998.³⁶ Finally, there is no discussion of potential adverse impacts the installation of the cable may have on sea turtles attempting to reach the beach for nesting.

Similarly, the DEIS explains in only vague terms that the installation of the cable will not affect endangered manatees in the coastal waters off Naval Station Mayport because “the construction period for installing cable is of limited duration.” DEIS at 4.6-3. Considering that boat strikes are the leading cause of manatee mortalities in Florida,³⁷ the DEIS should provide specific information on the number of vessels needed for the installation of cable and a description of the installation activities. Despite a potential risk of vessel-manatee collisions, the DEIS fails to examine the density of manatees in the area, the degree of risk of vessel collisions with manatees, and whether construction-related sounds will adversely impact the manatee. Finally, the DEIS fails to analyze any other potential impact the installation may have on manatees, such as the disruption of possible food sources on the marine floor. The DEIS states that the mitigation measures for marine mammals related to cable installation also apply to manatees. The DEIS enumerates a meager three mitigation measures: 1) lookouts will be on vessels; 2) observers will ensure no interference with marine mammals; and 3) the third measure pertains specifically to right whales. As previously mentioned, the effectiveness of observers in detecting marine life is limited and does not ensure that the installation of cable will not have an adverse impact on endangered manatees in the marine area.

The DEIS analysis of impacts on migratory birds is also deficient. Although the DEIS states that migratory birds use the Naval Station Mayport Beach, the Navy makes a determination of no significant impact because the “construction will be temporary and there are ample...grounds for migratory birds in the region.” DEIS at 4.6-4. This conclusion lacks any analysis on specific bird species, and the environmental impact is difficult to assess without a designated location for the cable termination facility. The DEIS does not consider that the construction in certain areas of Naval Station Mayport Beach may have a greater impact on the foraging and sheltering activities of migratory birds.

F. Incomplete or Unavailable Information

Throughout the DEIS the Navy makes conclusory findings of no adverse environmental impact without sufficient evidence to support these assertions. Notably, in the DEIS’s discussion on acoustic effects of sonar, the Navy acknowledges the paucity of scientific data on the actual acoustic effects of sonar and yet repeatedly determines “no adverse effect.” This lack of analysis goes directly against CEQ’s regulations concerning “incomplete or unavailable information.” 40 C.F.R. § 1502.22. If, during an agency’s evaluation of reasonably foreseeable adverse effects, there is incomplete or unavailable information, the agency “shall always make clear that such information is lacking.” *Id.* Moreover, if the incomplete or unavailable

³⁶ Loggerhead Turtle Expert Working Group Memorandum of December 4, 2007, available at <http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm>.

³⁷ See Manatee Bone Studies May Influence Public Policy Debate On Boat Speeds, Science Daily, April 1, 2005, available at <http://www.sciencedaily.com/releases/2005/03/050329133832.htm>.

information can be obtained and the “overall costs of obtaining it are not exorbitant,” the agency must include the information in the EIS. *Id.* If the information cannot be obtained because of exorbitant costs or the means to obtain the information are unknown, the agency shall include in the EIS: 1) a statement that the information is incomplete or unavailable; 2) a statement of the relevance of the incomplete or unavailable information to the agency’s evaluation of adverse impacts; 3) a summary of existing credible scientific evidence which is relevant to the agency’s evaluation of adverse impacts; and 4) the agency’s evaluation of such impacts “based upon theoretical approaches or research methods generally accepted in the scientific community.” *Id.* Hence, if data is incomplete or unavailable, the Navy must recognize this fact and must follow CEQ’s regulations where there is missing information.

By disregarding the regulatory procedures for assessing any reasonably foreseeable adverse impacts when there is relevant information missing, the DEIS does not constitute an informed agency decision. As courts have stated, “NEPA requires each agency to undertake research needed adequately to expose environmental harms.” *Sierra Club v. Norton*, 207 F. Supp. 2d 1310, 1335 (S.D. Ala. 2002) (quoting *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1248 (9th Cir. 1984) (citations omitted)). CEQ’s regulations establish a procedure by which the Navy is required to follow when it lacks sufficient information. Pursuant to NEPA, the Navy must “weigh the importance of the missing information against any barriers and costs of gathering such information.” *Id.* The DEIS fails to follow the requirements of NEPA concerning incomplete or unavailable information in the assessment of reasonably foreseeable adverse impacts; rather the DEIS simply ignores the above procedure in making its unjustified conclusions of “no adverse effect.”

IV. CUMULATIVE IMPACTS

Under NEPA, the Navy is required to thoroughly assess the cumulative impacts of the proposed USWTR. 40 C.F.R. §§ 1502.16, 1508.7, 1508.25. NEPA’s regulations define cumulative effects as “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” 40 C.F.R. § 1508.7. The cumulative impact analysis is not perfunctory, but rather “must provide a ‘useful analysis of the cumulative impacts of past, present and future projects.’ ... [C]umulative impact analysis must be timely. It is not appropriate to defer consideration of cumulative impacts to a future date when meaningful consideration can be given now.” *Hugh R. Kern v. United States Bureau of Land Management*, 2002 U.S. App. LEXIS 4602 (9th Cir. Mar. 22, 2002).

The Navy’s analysis of cumulative impacts is deeply flawed—focusing narrowly on the “short-term” nature of the potential adverse environmental impacts and ignoring that cumulative impacts “can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.07. Overall, the DEIS fails to assess the potential aggregate impact of activities taking place over the long-term, and disregards the cumulative impact of USWTR operations in conjunction with other non-Naval activities in the region. Furthermore, in its repeated nebulous assertion of “short-term” effects, the Navy “provides no information concerning the duration of such temporary impact or the extent of the impact.” *Habitat Educ. Ctr., Inc. v. Bosworth*, 381 F. Supp. 2d 842, 853 (E.D. Wis. 2005). The Navy’s inadequate

cumulative impact analysis contradicts the purpose of the cumulative impacts requirement which “is to provide readers with a complete understanding of the environmental effect a proposed action will cause.” *North Carolina Alliance for Transp. Reform v. United States Dep’t of Transp.*, 151 F. Supp. 2d 661, 698 (M.D.N.C. 2001).

A. Cumulative Impact of All USWTR Operations

NEPA’s cumulative impact analysis requirement “prevents a proponent from breaking a proposal into small pieces that, when viewed individually, appear insignificant but that are significant when viewed as a whole.” *City of Oxford v. Federal Aviation Administration*, 428 F.3d 1346, 1353 (11th Cir. 2005). Although the DEIS discusses the cumulative impact of individual actions, such as the acoustic effects of sonar, the Navy largely ignores the cumulative impacts of its own related activities. Under NEPA, the DEIS must include an analysis of the aggregate effects of the USWTR operations, including the overall effects of increased vessel traffic, increased underwater sonar activity, and introduction of the thousands of sonobuoys, acoustic device countermeasures, mobile acoustic torpedo targets, parachutes and other materials that will be deployed and abandoned annually in association with sonar and explosives training. In order to satisfy NEPA’s cumulative effects requirement, the Navy must attempt to determine the USWTR operation’s aggregate effects. The DEIS fails to analyze the overall cumulative impact of the USWTR’s overall effects on marine life. For example, the DEIS should include an analysis of the combined impact of sonar activities and vessel strikes on right whales.

B. Cumulative Impact of USWTR Operations and Unrelated Activities

While the DEIS does discuss other non-Naval activities that may have adverse effects on marine life, it omits any analysis of the synergistic effects of those activities in the region in conjunction with the planned USTWR operations. These ongoing activities in the region range from commercial fishing to shipping to port expansions to mining and geological exploration. Although each of these activities may not have a serious or lasting negative impact on its own, the combined impacts of these activities and the USTWR operations could have a devastating adverse environmental effect. While this analysis is merely what NEPA requires, it is especially important for the protection of critically endangered species and species whose populations are in decline. This is particularly critical for the right whale, a species at the brink of extinction due to the cumulative effects of a variety of human activities: entanglement with fishing gear and other debris, noise from commercial shipping and underwater bombing, contaminants, and habitat degradation.

C. Cumulative Impact on Right Whales

The impact from right whales’ long-term exposure to Navy sonar could worsen when combined with the expected substantial increase of vessel traffic in the region. The DEIS admits that the “number of large ships is predicted to double over the next two to three decades” (DEIS at 4.8-12) and, yet, the Navy does not consider the substantial increase in underwater noise from increase maritime traffic. The Navy “must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum.” *Grand Canyon Trust v. Federal Aviation Admin.*, 290 F.3d 339, 342, 346 (D.C. Cir. 2002). Just as the D.C. Circuit ordered the

FAA to “address the accumulated, or total, incremental impacts of various man-made noises” from *other* airports or airtours to determine the “total noise impact” of a proposed airport expansion near Zion National Park, the Navy must evaluate the accumulated and incremental impacts of these non-Naval activities and the USWTR operations on the ocean environment. *Id.* Likewise, the DEIS neglects to assess the potential increase in vessel strikes due to the combination of increased vessel traffic related to the USWTR operations and the anticipated increase of non-Naval vessel traffic in the region.

In the context of the preferred Jacksonville OPAREA, the DEIS fails to assess the cumulative acoustic effects on right whales that annually migrate to the right whale calving grounds and who may be repeatedly exposed to the Navy sonar. The DEIS concludes right whale exposure to the activities within the Jacksonville OPAREA would result in short-term effects and would “not likely affect annual rates of recruitment or survival.” DEIS at 4.3-66. However, the cumulative impacts analysis requirement is based on the notion that “even a slight increase in adverse conditions that form the existing environmental context may threaten significant harm.” *Georgia River Network v. United States Army Corps of Eng'rs*, 334 F. Supp. 2d 1329, 1342 (N.D. Ga. 2003). By describing the acoustic effect on right whales as short-term, the DEIS fails to consider the right whales’ extended stays in and repeated migration to the calving grounds and surrounding areas. Right whales spend four to five months each year in the federally designated critical habitat off the coast of Georgia. By failing to consider the incremental impact of continued exposure to Navy sonar the DEIS overlooks the potential disruption to right whales’ calving behavior and ignores NEPA regulation’s explicit recognition that “[c]umulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. Given the fragile existence of right whales and the vital importance of avoiding any disruption to the breeding and calving activities of right whales, it is incumbent on the Navy to analyze the cumulative effects of Navy sonar on right whales during the four to five months of calving.

D. Cumulative Impact of USWTR Debris

The DEIS states that thousands of sonobuoys, acoustic device countermeasures, mobile acoustic torpedo targets, parachutes and other materials will be deployed and abandoned annually in association with USWTR operations. The Navy justifies the discard of mass amounts of debris by discussing the difficulties of retrieval, but there is no consideration of retrieving some of these devices as an alternative to dumping them in the ocean. DEIS at 4.1-2. Instead, the DEIS discounts the impact of this large-scale solid waste disposal and simply notes that sonobuoys and other abandoned devices would corrode, degrade and eventually be incorporated into bottom sediments.

While the DEIS contains individualized assessment of the impact of some of the numerous items and chemicals the Navy will discard or release on the range, it does not address the cumulative impact of these actions. Items discarded or released into the ocean environment include, among many things, the sonobuoys, XBTs, and ADCs and annually, expended accessories such as parachutes, flex hoses and guidance wires for exercise torpedoes, numerous air launch accessories, rocket components, lead ballast, chemical releases from propulsion systems, batteries and other sources, together with discharges from ships. The DEIS dismisses

cumulative impacts of these materials due to the fact that they would be disposed over a wide area and thus will cover a minute percentage of the ocean floor.

For example, the DEIS estimates that 132 XBTs, 6456 sonobuoys, and 33 ADCs will be disposed of per year. *See* DEIS at 4.1-6. The DEIS then explains that it “would take roughly more than two million years to cover entire sea floor of the USWTR with sonobuoys.” (DEIS at 4.1-6). While this prodigious duration of time seemingly minimizes the cumulative impact of sonobuoys, the DEIS fails to consider the overall quality of marine habitat that may be cumulatively impacted by the large amounts of debris disposed of over a long period of time. Furthermore, despite the Navy’s reliance on the degradation and corrosion of materials upon settling on the ocean floor, the DEIS is devoid of any detailed information on the rate of degradation and the temperature and depth at which materials will degrade. To adequately examine cumulative effects, “some quantified or detailed information is required. Without such information, neither the courts nor the public....can be assured that the [Navy] provided the hard look that it is required to provide.” *Neighbors of Cuddy Mt. v. United States Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). Since the Navy depends on the degradation and corrosion of materials as a justification not to further examine the cumulative impacts of these discharges and releases, it is necessary to provide additional, detailed information supporting the assertion of no environmental impact.

Another significant oversight is the lack of analysis of the cumulative impact of discarded hoses and lines to sea birds, whales, and sea turtles. As discussed above, each of these categories of marine animals can become entangled in discarded fishing lines and plastics, resulting in starvation or drowning. This impact is of special concern for endangered species like the right whale for which the continued existence of the entire species is at risk. The cumulative impact of these various sources of entanglement must be evaluated, and measures to mitigate the harm caused by Naval operations developed and employed.

Finally, in addition to the aforementioned weaknesses of the DEIS cumulative impact analysis, the DEIS fails to satisfy NEPA’s requirement that cumulative impacts must include reasonably foreseeable future actions. Although the DEIS states the potential for mine warfare training and extended echo-ranging systems to be conducted in the USTWR (*See* DEIS 4.8-23 to 26), it is devoid of an analysis of the potential cumulative impacts that such extended uses would pose to marine life in the area, especially the endangered right whale. Pursuant to NEPA, a cumulative impact analysis must not examine a project in isolation, “without considering the ‘net’ impact’ that all projects in the area may have on the environment.” *LaFlamme v. FERC*, 852 F.2d 389, 402 (9th Cir. 1988). The DEIS’s failure to examine foreseeable future Navy operations within the USWTR does not meet NEPA’s cumulative impact requirement that the Navy examine “past, present and reasonably foreseeable *future* actions.” 40 C.F.R. § 1508.7 (emphasis added).

V. SEGMENTATION OF RELATED NAVAL OPERATIONS

The Navy cannot evade its responsibilities under NEPA by “artificially dividing a major federal action into smaller components without a ‘significant impact.’” *P.E.A.C.H. v. United States Army Corp of Eng’rs*, 87 F.3d 1242, 1247 (11th Cir. 1996) (quoting *Coalition on Sensible*

Transportation, Inc. v. Dole, 826 F.2d 60, 68 (D.C. Cir. 1987). Requiring a comprehensive EIS for related Navy actions prevents “segmentation” or “piecemealing” of a larger project, whereby EISs are prepared for each action individually rather than the entire group of projects. “While a cumulative effects analysis considers the combined effects of past, current, and proposed projects, a comprehensive EIS considers interrelated projects over a wider region.” *Georgia River Network v. United States Army Corps of Eng’rs*, 334 F. Supp. 2d 1329, 1342 (N.D. Ga. 2003).

The DEIS for the proposed USWTR is part of the Navy’s larger failure to satisfy NEPA’s mandate that the Navy analyze connected activities in the region. Under NEPA, the regulations require that the Navy analyze proposed actions in the same EIS when it is the “best way to assess adequately the combined impacts of similar actions.” 40 C.F.R. § 1508.25(a)(3). When more than one proposal for related actions “will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together.” *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976). Currently, the Navy is conducting two other distinct environmental reviews for its training programs in the Atlantic, including EIS’s for the Atlantic Fleet Active Sonar Testing (AFAST) and the Jacksonville (Jax) Range Complex. These Navy training programs call for the expansion of training activities within or adjacent to the USWTR’s Jacksonville OPAREA and include activities related to or similar to those proposed to take place within the USWTR. The AFAST and Jax Range Complex proposals involve increased vessel activity, enhanced mine warfare, and additional sonar training, the environmental impacts of which should be examined in conjunction with the impact of USWTR operations.

The Navy “must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum.” *Grand Canyon Trust*, 290 F.3d at 342. Accordingly, a comprehensive EIS “is appropriate...where the proposal itself is regional or systemic in scope, or where the proposal is one of a series of interrelated proposals that will produce cumulative system wide[sic] effects that can be meaningfully evaluated together.” *Georgia River Network*, 334 F. Supp. 2d at 1342 (quoting *Izaak Walton Legal of America v. Marsh*, 210 U.S. App. D.C. 233, 655 F.2d 346, 374 (D.C. Cir. 1981)). The Navy’s improper segmentation of its three interrelated projects—by conducting three distinct EISs—undermines NEPA’s objectives of informed public participation and informed decision-making. Moreover, considering the potential adverse impact the USWTR will have on marine life, and especially on the imperiled right whale, it is imperative that the Navy analyze the adverse impacts of the USWTR in conjunction with the impacts of the other proposed Naval operations in the same region. The DEIS fails to analyze the combined environmental impacts of the Jacksonville OPAREA with AFAST and the Jax Range Complex.

VI. MITIGATION

Pursuant to NEPA’s regulations, an agency’s EIS must include appropriate mitigation measures and discuss means to mitigate adverse environmental impacts. 40 C.F.R. §§ 1502.14(f), 1508.20. “[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA [and] [w]ithout such a discussion, neither the agency nor other interested groups and individuals can properly evaluate

the severity of the adverse effects.” *Robertson*, 490 U.S. at 352. While an agency’s mitigation plan need not detail the “precise mitigation measures,” the proposed measures must be “developed to a reasonable degree.” *National Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001). “A ‘perfunctory description’ or ‘mere listing’ of mitigation measures, without supporting analytical data is insufficient....” *Id.* (internal citations omitted).

A. Inadequate Acoustic Effect and Vessel Strike Mitigation Measures

Despite this clear mandate, the DEIS largely ignores the mitigation requirement. The measures proposed are of speculative value, and the Navy makes no attempt to document their potential for success. The DEIS’s most discussed measure of mitigating the acoustic effects and vessel strikes—placing observers at the bow of boats—reveals a lack of any meaningful mitigation analysis. The DEIS overstates the overall effectiveness of this measure and is devoid of empirical support. Despite a lengthy discussion of the Navy lookout training and the operating procedures for detecting marine species, the DEIS fails to recognize the severe limits of an observer’s ability to detect whales; indeed, an observer can detect whales at a very limited geographic distance.

The limited effectiveness of using lookouts is widely documented. The NOAA recognizes the inefficacy of posted lookouts in avoiding vessel strikes with right whales, stating that the ability of lookouts to locate whales is “limited by the difficulty of: (1) Observing animals in low/no light conditions (e.g. night); (2) observing animals in sea states greater than Beaufort 3-4; and (3) observing whales beneath the surface (where they spend most of their time).” 73 Fed. Reg. 60173, 60182 (Oct. 10, 2008). Moreover, with deep-diving whales that spend limited time at the surface, such as beaked whales, this limitation is enhanced.³⁸ According to the NOAA, right whales “rarely break the surface and their backs are black and grey, making them difficult to spot even under ideal conditions.” 73 Fed. Reg. 60173, 60182 (Oct. 10, 2008). Considering the grave consequences of one right whale strike, the mitigation measures offered by the Navy are deficient. While lookouts may aid other methods of detection, used alone they are of minimal value in the avoidance of marine mammals, specifically the endangered right whale.

The DEIS offers passive acoustic sonar as an augmenting measure of detecting marine mammals underwater, however, this measure also fails to mitigate the acoustic effects of USWTR. In a one paragraph discussion, the DEIS states that “all personnel engaged in passive acoustic sonar operation would monitor for marine mammal vocalizations and report the detection...to the appropriate watch station for dissemination and appropriate action.” DEIS at 6-6. Yet the DEIS lacks any support on the effectiveness of passive listening in detection of marine life. First, the DEIS omits any discussion on the vocalizing behavior of right whales, and it fails to recognize that “little is known about the vocalization or diving behavior of right whales on migration or on the calving grounds.”³⁹ Second, the DEIS does not discuss the effectiveness of passive listening during USWTR operations when personnel are engaged in the USWTR operations. In fact, the Navy expressly contradicts its proffered use of passive acoustic sonar as

³⁸ See Barlow, J. and Gisiner R., Mitigation and Monitoring (paper presented for MMC April 2004 Beaked Whale Technical Workshop).

³⁹ See Florida Fish and Wildlife Letter, *supra* note 2, at 3.

a means of mitigation, stating in the DEIS mitigation section that Navy personnel’s “primary duty is accomplishment of the exercise goals, and they should not be burdened with additional duties unrelated to that task.” DEIS at 6-27. Third, NOAA states sonar devices are limited by “[d]etection ranges that are inadequate to provide mariners sufficient time to react...[and] resolution inadequate to differentiate objects such as whales from other objects in the water.” 73 Fed. Reg. 60173, 60182 (Oct. 10, 2008). Finally, any detection by passive listening is quite limited to certain marine mammals that produce detectable acoustic signals, excluding pinnipeds and sea turtles.

B. Right Whale Critical Habitat

The risk of vessel strikes within the right whale critical habitat and surrounding area is heightened by the USWTR operations. Furthermore, the adverse impact of a whale strike is magnified by the current imperiled state of the small existing right whale population. As mentioned above, the loss of even one animal from the population from non-natural causes could push the species over the brink of extinction.⁴⁰ Despite no overlap between the Jacksonville OPAREA and the right whale critical habitat, the preferred Site A presents a significant risk to the right whales in the critical habitat. Vessels transiting to and from the home ports and the Jacksonville OPAREA will invariably cross through the right whale critical habitat. Yet the DEIS neither specifies nor estimates the number of vessels associated with the USWTR operations that will transit through the critical habitat. Nor does the DEIS provide an assessment of the impact of increased vessel traffic in the critical habitat that is associated with the 470 annual exercises taking place at the Jacksonville OPAREA.

The DEIS’s discussion of mitigation measures for vessels transiting right whale critical habitat does not adequately consider the density of whales within the critical habitat or the gravity of a right whale mortality caused by a vessel strike. DEIS at 6-18 to 19. There are several pitfalls to the six enumerated mitigation measures making them a glaring example of a “‘mere listing’ of mitigating measures, without supporting analytical data.” *National Parks & Conservation Association*, 241 F.3d at 734. First, the DEIS’s mitigation measures are related to activities within the critical habitat only *during* the calving season. Second, the measures are ostensibly based on the efficacy of lookout’s identifying ships, a measure whose inadequacies discussed above make it a faulty basis for the various means of mitigation. Accordingly, the effectiveness of a Naval communication system that disseminates whale sightings is dubious when based on the limited ability of lookouts detecting whales. Third, the requirement of speed reduction lacks specificity in terms of the actual speed limit and whether the limits will vary depending on factors such as vessel size and time of day. It is uncertain whether the Navy will require vessels to observe the 10-knot speed limit recommended by NMFS in order to avoid vessel-whale collisions. Fourth, the requirement that ships not transit the critical habitat in a North-South direction is a nominal measure and lacks practical mitigation effect for the Jacksonville OPAREA given the fact its USWTR site is located directly east of the home ports. In summation, the DEIS’s mitigation measures concerning the right whale critical habitat are grossly deficient. The measures are rudimentary in nature and should serve only as augmenting measures to a more comprehensive mitigation approach, including the recommended measures discussed below.

⁴⁰ See NMFS 2003 Stock Assessment Report, *supra* note 4.

C. Mitigation Related to Cable Installation

The DEIS's three mitigation measures offered to address the impacts of the installation of the miles of undersea cable is a mere "perfunctory description," that does not satisfy the NEPA mitigation requirements. *See National Parks & Conservation Association*, 241 F.3d at 734. First, one of the three measures mentioned by the Navy pertains solely to right whales, stating that cable installation for Site A will be avoided during right whale calving season. DEIS at 6-22. While this measure is extremely important given the exigent circumstances of right whale survival, it fails to mitigate the adverse impacts of the destruction of the quantity and/or quality of essential fish habitat incurred in range installation, and the potential disturbance of construction activities on brumating or diving sea turtles.

The other two mitigation measures for cable installation also fall short of reducing the harm to marine life from the installation activities. These mitigation measures provide that: (1) "lookouts would be on all vessels"; and (2) "observers would ensure that the cable installation process does not interfere or entangle any marine mammal, sea turtle, or Sargassum mat." DEIS at 6-22. Despite being semantically different, both measures are essentially the same, based on the faulty premise that observers or lookouts will be able to locate all potential marine life threatened by the installation activities. As discussed above in depth, the efficacy of mitigation measures based on human visual observation is limited. Similar to other mitigation measures included in the DEIS, these measures lack detail and are wholly insufficient. Finally, no mitigation measure is offered to offset the potential disruption the installation of cable could have on the marine floor habitat.

D. Mitigation of Navy Debris

The DEIS fails to set forth any mitigation measures concerning the massive amount discarded debris associated with the USWTR operations. In its analysis of the adverse impacts of the discard of debris, the DEIS justifies no retrieval of marine debris by explaining the difficulties of retrieval efforts. DEIS at 4.1-2. According to the Navy, the "identification and retrieval efforts are difficult, if not impossible, to conduct following an activity." The DEIS's brief discussion of retrieval efforts merely states reasons why the Navy is not attempting to mitigate the adverse environmental impact of the substantial amounts of debris that will be discarded into the ocean annually. There is no attempt to examine alternative options of mitigation such as the partial retrieval of debris.

"In NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' is an understanding that the EIS will discuss the extent to which adverse effects can be avoided." *Robertson*, 490 U.S. at 352-53. The DEIS's all-or-nothing approach is not a sufficient discussion of how the adverse impacts of discarded debris can be avoided. By simply not exploring any other mitigation measures, the DEIS does not attempt to avoid, minimize, rectify, reduce, or compensate for its dumping of debris, all options of which are included in the CEQ regulation's definition of "mitigation." *See* 40 C.F.R. § 1508.20.

E. Monitoring

A quarter of the DEIS's mitigation section is devoted to discussing present and future Naval monitoring and research programs. Although we commend these efforts to enhance the protection of marine natural resources, these mitigation measures do not address the immediate impact presented by the installation and implementation of the USWTR. The DEIS states the monitoring plans' primary focus will be on "effects to individuals but data may also be used to support investigation of potential population-level trends in marine species distribution, abundance, and habitat use in various range complexes and geographic locations where the Navy training occurs." DEIS at 6-11. In order to serve as an effective mitigation measure for the USWTR, the Navy's monitoring system should be extensively implemented prior to the commencement of the installation of the USWTR. Information obtained through the Navy's monitoring, such as marine mammal density, will enhance mitigation efforts and will assist in the avoidance of an irreversible adverse impact on marine species, such as the endangered right whale.

E. Recommended Mitigation Measures

Below is a list of recommended measures intended to mitigate the adverse environmental impacts on specific marine species.

1. *Impacts to Whales*

To lessen the Navy's impacts on whales, including the critically endangered right whales, several measures are recommended.

- **Reduce Ship Speed.** The scientific literature suggests a strong correlation between ship speed and collisions with whales.⁴¹ We recommend that Navy vessels observe NMFS's 10-knot speed limit when traveling to and from the USWTR.
- **Monitoring for avoidance.** Tools that are readily available to the Navy and other scientists can reliably locate vocalizing marine mammals on the acoustic range. Passive acoustic monitoring of marine mammals should be included as part of the Navy's regular mitigation procedures. Monitoring technologies include passive acoustics (pop-up buoys, sonobuoys and moored buoys), towed passive arrays, telemetry, and predictive modeling. In addition, the Navy could use infrared detection and light amplification during periods of low light (such as nighttime).
- **Monitoring and Reporting.** The Navy should also include collection of data on the exposures of marine mammals to sonar when it is in use. This data would provide important information on the impacts of marine life to active sonar and would provide scientists with invaluable data for assessing the impacts and range of behavioral responses.

⁴¹ Laist, et al., Collisions between ships and whales, 17 Marine Mammal Science 1, 35-75 (2001).

- Adopt a “No Whales Present” Policy for use of sonar. We recommend that the Navy only conduct sonar activities if it can determine that no whales are present within a specified range.
- Modification of sonar protocol. This could include ramp up, turning on the sonar at a relatively low level, giving animals in the area time to move away before the sonar reaches full operating levels. It also could include changing the level or frequency of the sonar to minimize the impact on marine life.
- Conduct aerial surveys by Navy personnel over the training area prior to the commencement of operations.
- Restrict USWTR operations times to exclude operations during the right whale calving season.
- Other possibilities include the use of alarms, both audible and visual, to encourage whales to move away from the area, the use of satellite imagery to detect whales, and the use of a pilot boat to precede activity in the region.

2. *Impacts on Sea Turtles*

To lessen the Navy’s impacts on sea turtles, several measures are recommended:

- The Navy should not undertake construction activities associated with the transmission cable and junction box during nesting season. Nesting season coincides with the period of time when inshore sightings of sea turtles peak (roughly late spring through early fall).⁴² Limiting the period of disturbance to a time frame when turtle activity is thought to be at its lowest would limit adverse effects. This is particularly important to avoid impacts to brumating turtles.
- The Navy should also use biodegradable materials for the parachute and assemblage. Material that biodegrades would limit the hazard to sea turtles from ingestion of debris and entanglement in the assemblage.
- The Navy should reduce the speed of its vessels traveling through the OPAREA. Slower speeds would reduce the risk of collision with these slow-moving animals.
- Use of the passive and active detection methods recommended for marine mammals would also serve to identify sea turtles and, assuming the Navy avoided the use of sonar or dropping equipment via parachutes when

⁴² Epperly, *supra* note 33.

turtles are detected, lower the risk of adverse impacts. Such measures are especially warranted in the late fall and early winter, when sea turtles tend to amass in offshore waters.⁴³

3. Impacts to Hardbottom


To lessen the Navy's impacts on hard bottom that will occur as part of range installation, several measures are recommended:

- Use of steel or iron ballast instead of lead to reduce potential for toxins to leach and destroy areas of hardbottom, and corals and the invertebrates that are sheltered there.
- Use of biodegradable parachutes and assemblage would reduce the potential impact of breaking off parts of coral colonies and smothering corals and hardbottom and drowning the species that reside there.
- Detailed mapping to identify the extent and location of harbottom, including corals and reefs. Knowledge of the location of sensitive and important resources could guide the Navy's planning and avoid adverse impacts.
- Monitor impacts to deep coral banks and identify areas that have been disturbed or destroyed. Development of this information can aid scientists in understanding the complexity of this unique habitat and help the Navy avoid adverse impacts in the future.

VII. CONCLUSION

In sum, the DEIS does not satisfy the Navy's legal obligations under NEPA and the Administrative Procedures Act, and, if implemented as planned, would also violate several other federal laws. We urge the Navy to withdraw the DEIS and conduct a more thorough analysis of reasonable alternatives and the range of environmental impacts anticipated from the implementation of the proposed action. In order to comply with NEPA, we also urge the Navy to complete a more searching review of the cumulative impacts of this proposal, and adopt more meaningful mitigation measures.

Thank you for your consideration of our comments. We would be happy to discuss with you any questions you might have.

Sincerely,

Catherine M. Wannamaker
Nathaniel H. Hunt

⁴³ *Id.* at 391.