



October 20, 2008

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Lauren Milligan
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Re: SAI #FL200809154433C, Duval Co., Draft Overseas Environmental Impact Statement/Environmental Impact Statement, Undersea Warfare Training Range, Atlantic Ocean

Dear Ms. Milligan:

The Florida Fish and Wildlife Conservation Commission (FWC) offers the following comments on the Draft Environmental Impact Statement/Environmental Impact Statement (DEIS) for the Department of the Navy's proposed Undersea Warfare Training Range (USWTR) in response to the request for review posted on your website, <http://projects.earthtech.com/uswtr>.

Project Description

The Navy is proposing to construct an Undersea Warfare Training Range (USWTR). The purpose of the site is to train Navy personnel in the use of sonar in shallow environments to locate submarines, particularly quiet diesel submarines in use today. Existing training sites are located in deepwater environments, whereas typical wartime scenarios are often in shallow waters. Training in deep-water environments does not adequately prepare personnel for coastal scenarios because propagation of sound differs greatly between the two environments. Currently there are four proposed sites, with the most favored (Site/Alternative A) located approximately 93 km (50 nautical miles) offshore of northeastern Florida in the Jacksonville Operating Area (OPAREA). The other three sites are offshore of central South Carolina (Charleston OPAREA, Site/Alternative B), offshore of southeastern North Carolina (Cherry Point OPAREA, Site/Alternative C), and offshore of northeastern Virginia (VACAPES OPAREA, Site/Alternative D).

The USWTR project would include instrumentation of a 500-square-nautical-mile area of ocean bottom with undersea cables and sensor nodes. The site would consist of approximately 300 transducer nodes connected to each other by commercial fiber optic undersea cable, and connected to onshore facilities via a single, buried trunk cable. The training would typically involve up to three vessels and two aircraft for any one training event. Up to 470 training events could take place each year. Other materials include non-explosive exercise weapons and other training-related devices (sonobuoys, target submarine simulators, etc.). Forms of active sonar include the SQS-53 AND SQS-56 sonars with nominal source level for training of 235 and 225 dB re $1\mu\text{Pa}^2$ @ 1 m, respectively. The frequencies involved in the acoustic signals range from 1,000 to 10,000 Hz.

Potentially Affected Resources

All four sites under consideration fall within the geographic range of the North Atlantic right whale (*Eubalaena glacialis*), one of the most endangered large whales in the world, with an estimated population of approximately 350 individuals (Kraus *et al.* 2001). Recent modeling efforts indicate that the loss of as few as two females per year may ensure the extinction of the species (Caswell *et al.* 1999, Fujiwara and Caswell 2001). Due to their high mortality rates, each female right whale must produce at least four calves over its lifetime to replace itself in the population (National Marine Fisheries Service [NMFS] 2008).

North Atlantic right whales migrate south from their feeding grounds in the northeastern U.S. to their calving grounds in Georgia and Florida. The calving grounds are federally designated critical habitat for this species. The proposed USWTR site off the Florida coast (Site A) is very near the critical habitat and calving grounds. Mainly adult females and calves, along with some juveniles and adult males, migrate to the southeastern calving grounds each winter, and may remain in the area for four to five months. Migration from the northeastern feeding grounds typically begins in October, although some individuals may not travel as far south as the southeastern critical habitat. Most right whales have left the calving grounds by April for the return trip to the northern feeding and nursing areas. Migratory patterns are variable, in part because they are subject to variability of weather and climatic influences. Individuals may also venture south outside of their typical feeding areas at other times of the year, such that right whales could be found in the mid-Atlantic during much of the year. For instance, carcasses and entangled whales have been recorded off of the mid-Atlantic region in the summer months.

Although North Atlantic right whales are thought to concentrate within 55 km of the coast on their mid-Atlantic migration (Knowlton *et al.* 2002), sightings do occur beyond this distance from shore. We concur with Hain and Kenney (2005) that uncertainty in predicting right whale occurrence is increased with distance from the shoreline because of reduced search efforts offshore compared to nearshore areas. In the southeastern calving grounds, recent aerial survey efforts have located right whales approximately 70 km from the shoreline. In addition, an entangled whale, equipped with a satellite tag during disentanglement operations, was recorded at approximately 118 km off the Florida shoreline on December 5, 2005. Despite uncertainties, data and anecdotal evidence indicate that right whales can occur at distances greater than 55 km along the eastern seaboard.

Ship strikes are the main source of human-caused mortality in this species (Knowlton and Kraus 2001). From 1991 to 2002, 14 documented North Atlantic right whale mortalities were determined to be the result of ship strikes. More carcasses have been recovered since then, including several reproductive females that had been struck by ships. Recently, the mortality of a right whale calf found off the coast of Jacksonville on January 10, 2006, was attributed to a ship strike. The magnitude of undocumented mortalities is unknown because carcasses may sink before ever being detected.

Vessels navigating between port and any of the proposed USWTR Sites/Alternatives (A, B, C, or D) would contribute to increased vessel traffic along the eastern seaboard, thereby increasing collision risk to right whales during migration. Site A, in northeastern Florida, also increases the risk to right whales in their winter calving grounds. Vessels originating from Mayport Naval Station in Florida and Kings Bay Naval Station in Georgia and transiting to Site A would pass directly through an area where aerial surveys have consistently documented high concentrations of right whales, and the 15- to 17-knot transit speeds cited in the DEIS can be fatal to struck right whales (NMFS 2008).

The winter inhabitants off the coast of Jacksonville (near Site A) consist primarily of females and their calves, the most vulnerable and most important component of the right whale population, both of which must spend more time at the surface due to the calves' undeveloped lung capacity. This characteristic may contribute to the disproportionately high number of females struck by ships (NMFS 2008).

A secondary concern is the noise and other disturbances from low-altitude aircraft (helicopters and fixed wing), which can affect cetaceans, causing short term behavioral changes including startle response and possible separation of mothers and calves (Patenaude *et al.* 2002, Nowacek *et al.* 2004). Altitudes ≤ 150 meters and lateral distances ≤ 250 meters have been found to cause behavioral reactions by bowhead whales (*Balaena mysticetus*), a close relative of the right whale. Combined with other cumulative stressors, relatively minor incidents can be harmful. Shore-based training aircraft will pass over critical habitat during transit. While not as potentially harmful as increased collision risk, steps should be taken to minimize aircraft impacts on right whales, especially within the critical habitat.

The training activities within the boundaries of the proposed Site A USWTR and the increase in transiting vessel and aircraft traffic are of concern for all marine mammals but particularly for right whales. The additional noise levels and increased vessel traffic could further jeopardize right whales, a species already at high risk of extinction.

While all four sites are located in areas where right whales could be present, if the project does move forward, we believe the vital importance of the southeastern calving grounds to the persistence of the species renders the Jacksonville OPAREA inappropriate for the USWTR.

Recommendations Regarding Proposed Activities

1. We recognize and support the need for the proposed training for national security; however, based on the endangered status of the right whale and the importance of protecting their habitat along the U.S. eastern coast, our preferred alternative for this project is the "No Action" alternative.
2. Should the USWTR project move forward and one of the four proposed sites is selected, we strongly recommend against Site A (offshore Jacksonville) because of its proximity to the right whale calving grounds and possible negative impacts, including an anticipated increase in traffic through critical habitat.

3. If Site A is ultimately chosen, we recommend that the Navy follows both the proposed Site A mitigation measures specified in the DEIS as well as the additional mitigation measures recommended below.
4. During the project activities, should there be any cetacean strandings that are temporally and spatially coincident with Navy training events, the activity should cease and the Navy should fund a thorough investigation to determine the cause of the strandings. Activities should not resume until the identified cause can be appropriately addressed.
5. All proposed sites should receive an NMFS Section 7 review for potential impacts to right whales as all sites are along the migratory path of right whales moving from their feeding grounds to their calving grounds. Knowledge of spatial and temporal extent of offshore migratory paths is limited, as noted above, although evidence indicates that at least some right whales are found at a distance from shore consistent with USWTR placement. The distance from shore of any of the proposed sites (Charleston OPAREA at 74 km, VACAPES OPAREA at 63 km offshore, Cherry Point OPAREA at 86 km, and Jacksonville OPAREA at 93 km offshore) does not preclude the presence of right whales; therefore, section 7 consultation is prudent for any of the proposed locations of the USWTR.

Recommendations for Mitigation Measures for Impacts to Marine Mammals

1. The DEIS proposes some mitigation measures for all Sites/Alternatives such as posting trained lookouts and maneuvering away from observed whales. It also specifies additional measures specific to Site A to be exercised during right whale calving season. Measures specific to Site A include a notification message sent to all ships prior to calving season regarding North Atlantic right whales, avoiding unnecessary north-south transits within the critical habitat during the calving season, vessels using extreme caution and operating at slow, safe speeds, and limiting training and operations in the critical habitat and consultation area to daylight hours and periods of good visibility. While these proposed Site A mitigation measures would be useful, they should be strengthened as follows:
 - a. We recommend that any mitigation measures should not be limited solely to the confines of the designated federal critical habitat boundaries, as large concentrations of right whales have been documented outside of the defined critical habitat boundary.
 - b. We recommend that the Navy make seasonal adjustments to the types and number of training scenarios. Exercises could be limited during the peak of calving season (December through March). At a minimum, the number of surface ships that must transit between Mayport and Site A should be reduced during this critical four-month period.
 - c. We recommend that all Navy vessels transiting to or from Mayport and Site A should reduce speeds below the 15 to 17 knots reported as typical Navy ship transit speeds to reduce the risk of fatal collisions with right whales. The NMFS

recently issued a ship speed rule (NMFS 2008) establishing a limit of 10 knots for non-exempt vessels and asking Federal vessels to voluntarily observe the rule when and where their missions would not be compromised.

- d. Navy aircraft transiting between shore and Site A (and passing over critical habitat) should maintain a maximum feasible altitude to reduce potential impacts to right whales. Non-exempted civilian aircraft are prohibited from intentionally approaching within 460 m of any right whale (NMFS 2004) and we suggest transiting Navy aircraft maintain a distance of 460 m (500 yards) whenever possible. When they occur, right whale sightings and any observed behavioral reactions to passing aircraft should be documented and reported to the Early Warning System (EWS) network.
2. We recommend that the Navy assist in funding research on satellite tag technology that would improve the knowledge base of the migratory patterns and behaviors of right whales along the eastern U.S. seaboard. As noted previously, timing of migration is variable among years and is influenced by a number of environmental factors. The offshore extent of right whale migration, and influencing factors, are also poorly known. Satellite tagging of right whales would provide valuable information on migratory behavior that is difficult to obtain through traditional means, such as vessel or aerial studies, and would reduce uncertainty of right whale presence at the proposed USWTR.
3. Navy protocols for detecting right whales and other cetaceans call for shipboard and/or aerial observers and passive listening for detecting right whales and other marine mammals. The amount of dive time in conjunction with weather/visibility issues, however, will limit the ability of observers to detect marine mammals. From a ship, right whales can be more difficult to identify than other cetaceans because they lack a dorsal fin. Aural detection requires that animals are vocalizing. Little is currently known about the vocalization or diving behavior of right whales on migration or on the calving grounds; therefore the existing Navy protocols offer essential but not optimal protections. In addition, the DEIS did not provide specifications, such as altitude, spatial or temporal extent, etc., for the aerial surveys that they propose to conduct prior to commencement of warfare exercises. The efficacy of aerial surveys for detecting all cetaceans in an area is fair at best and is dependent upon flight specifications as well as environmental factors (visibility, Beaufort Sea State levels, winds, etc.). Detectability of mom/calf pairs for standardized aerial surveys in the southeast has been estimated to be as low as 33% (Hain *et al.* 1999).

Because of the limitations of the proposed detection methods, we recommend that the Navy use additional methods for detecting the presence of marine mammals. Passive acoustic monitoring (e.g., using hydrophone arrays) provides greater detectability of vocalizing mammals than passive listening. Passive acoustic monitoring has been used previously by the Navy (Jarvis *et al.* 2002) and other researchers (i.e., Clark *et al.* 1996), and should be employed routinely in naval exercises. Additionally, the commonly publicized distance for recognizing human divers using sonar is a minimum of 700 m (i.e.,

http://www.arstech.de/diver_detection/diver_detection.html). Given that cetacean lungs are larger than human lungs, a cetacean should be detectable at a greater range than the customary 700 m for recognizing humans.

We recommend that the Navy take advantage of current detection methods, and assist with funding additional research to develop and improve methods of detecting cetaceans and recording their behavioral responses to noise exposure, such as:

- a. Deploy satellite and time-depth recorders to record behavioral responses, such as diving patterns and directional changes of right whales to proposed activities, including ship transit and exposure to sonar.
 - b. Explore the use of low-power active sonar for detecting right whales and recording their behavioral responses to active sonar.
 - c. Develop a model of the propagation of sound in the shallow water environment of the chosen USWTR site for evaluating received sound levels if a marine mammal is inadvertently exposed during Navy exercises.
4. Provide funding for research on the auditory characteristics of baleen whales, particularly right whales, as well as the physiological and behavioral responses to sounds. Estimates of thresholds for Temporary Threshold Shifts (TTS) and Permanent Threshold Shifts (PTS) in the DEIS were largely conjecture because auditory characteristics of cetaceans, especially whales, are poorly studied. Further, behavioral responses of cetaceans to sound described in the DEIS were mainly derived from studies on captive animals (Schlundt *et al.* 2000, Finneran *et al.* 2001). Cetacean behavioral responses in the wild likely differ from those in captivity and additional studies of behavior in the wild, such as Nowacek *et al.* (2004), are needed. If any cetacean is inadvertently exposed to sonar during exercises, however, a full and thorough investigation should be conducted to evaluate impacts to the animal(s), contributing to the pool of information regarding TTS/PTS and behavioral responses of cetaceans.

Although the Navy is proposing to reduce or cease active transmission levels when a whale or dolphin is detected within certain distances of the associated equipment (with reductions starting at 1,828 m and ceasing at 183 m), a marine mammal just outside of a 320-m detection limit could potentially receive > 181 dB re $1 \mu\text{Pa}$ (based on a nominal source of 235 dB re $1 \mu\text{Pa}$ @ 1 m of the SQS-53 sonar and the standard 6 dB decrease in SPL with a doubling of distance). Cetacean strandings in the Bahamas in March 2000, spatially and temporally coincident with naval exercises that were also using these mid-frequency sonars, could have been exposed to Sound Pressure Levels (SPL) of 160 dB re $1 \mu\text{Pa}$ according to complex sound propagation models (International Council for the Exploration of the Sea [ICES] 2005). Likewise, strandings in the Canary Islands in September 2002 began soon after the start of naval exercises involving mid-frequency sonar (ICES 2005). The strandings mainly involved beaked whale species; however, effects of sound levels on other cetaceans, such as right whale females with calves, are largely unknown. Refined information on auditory and behavioral characteristics of cetaceans in response to sound, together with a good model of sound propagation and detection of marine mammal locations

would greatly improve the ability to understand and mitigate potential impacts of these types of Navy activities.

5. We commend the Navy's support of the EWS aerial surveys and recognize the important role Fleet Area Control and Surveillance Facility Jacksonville plays in the dissemination of right whale sightings. The EWS aerial surveys serve a vital role in right whale research and management in the Southeast U.S. (e.g., ship strike mitigation, photo-identification data, detection of entangled or dead whales). The Navy should continue to support the EWS and ensure that increases in Navy training exercises do not interfere with EWS aerial surveys or hinder survey efforts as a result of airspace closures.

We appreciate the opportunity to provide input on this project and are available to provide additional assistance for our suggested mitigation proposals, if needed. Please do not hesitate to contact me at 850-410-5272 if you would like to coordinate further, or Tom Pitchford or Leslie Ward at 727-896-8626 if you have any technical questions regarding these comments.

Sincerely,



Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination

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