
3.3 Marine Habitats

**Supplemental Environmental Impact Statement/
Overseas Environmental Impact Statement
Northwest Training and Testing**

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3.3 Marine Habitats

3.3.1 Affected Environment

For purposes of this Supplemental Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) (Supplemental), the Study Area for marine habitats remains the same as that identified in the 2015 Northwest Training and Testing (NWTT) Final EIS/OEIS.

3.3.1.1 Existing Conditions

Following a review of recent literature, the existing conditions of marine habitats in the Study Area as listed in the 2015 NWTT Final EIS/OEIS have not appreciably changed. As such, the information presented in the 2015 NWTT Final EIS/OEIS remains valid. Table 3.3-1 in the 2015 NWTT Final EIS/OEIS shows the habitat types within the open ocean, and bays and estuaries of the Study Area, and these habitat types have not changed.

The Magnuson-Stevens Fishery Conservation and Management Act, which was reauthorized and amended by the Sustainable Fisheries Act (1996), requires eight regional fishery management councils to describe and identify Essential Fish Habitat (EFH) in their respective regions, to specify actions to conserve and enhance that EFH, and to minimize the adverse effects of fishing on EFH. Congress defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” Many of the habitats in the Study Area are protected under EFH. Habitats in the Study Area that are protected under the Magnuson-Stevens Fishery Conservation and Management Act as EFH and Habitat Areas of Particular Concern designations have not changed. The water itself, as marine habitat, is assessed in terms of water quality impacts in Section 3.1 (Sediments and Water Quality) and as part of EFH in Section 3.9 (Fishes), so it is not addressed further here.

3.3.1.2 Soft, Hard, or Vegetated Shores, and Aquatic Beds

The descriptions and locations of soft, hard, or vegetated shores, and aquatic beds, as discussed in the 2015 NWTT Final EIS/OEIS have not changed in the Offshore Area, Inland Waters, or the Western Behm Canal (Alaska). As such, the information presented in the 2015 NWTT Final EIS/OEIS remains valid.

3.3.1.3 Soft Bottoms, Hard Bottoms, and Artificial Structures

The descriptions and locations of soft bottom, hard bottom (e.g., seamounts and hydrothermal vents), and artificial structures (e.g., artificial reefs, shipwrecks, fish-aggregating devices) as discussed in the 2015 NWTT Final EIS/OEIS (see Figure 3.3-1 through 3.3-3 in the 2015 NWTT Final EIS/OEIS) have not changed in the Offshore Area, Inland Waters, or the Western Behm Canal (Alaska). As such, the information presented in the 2015 NWTT Final EIS/OEIS remains valid. Shipwreck data has been updated and is discussed in Section 3.10 (Cultural Resources).

3.3.2 Environmental Consequences

The 2015 NWTT Final EIS/OEIS considered training and testing activities that currently occur in the Study Area and considered all potential stressors related to marine habitats. The stressors applicable to marine habitats in the Study Area for this Supplemental are the same stressors considered in the 2015 NWTT Final EIS/OEIS:

- **Explosives** (in-water explosions)
- **Physical disturbance and strike** (vessels and in-water devices, military expended materials, seafloor devices)

This section evaluates how and to what degree potential impacts on marine habitats from stressors described in Section 3.0.1 (Overall Approach to Analysis) may have changed since the analysis presented in the 2015 NWTT Final EIS/OEIS was completed. Proposed training and testing activities, the number of times each activity would be conducted annually, and the locations within the Study Area where the activity would typically occur under each alternative are presented in Table 2.5-1, Table 2.5-2, and Table 2.5-3 in Chapter 2 (Description of Proposed Action and Alternatives). The tables also present the same information for activities proposed in the 2015 NWTT Final EIS/OEIS so that the proposed levels of training and testing under this supplement can be easily compared.

The analysis presented in this section also considers standard operating procedures, which are described in Section 2.3.3 (Standard Operating Procedures) of this Supplemental, and mitigation measures described in Chapter 5 (Mitigation). The Navy would implement these measures to avoid or reduce potential impacts on marine habitats from stressors associated with the proposed training and testing activities.

3.3.2.1 Explosive Stressors

3.3.2.1.1 Impacts from Explosives

As stated in the 2015 NWTT Final EIS/OEIS, the potential impacts of detonations on marine habitats are assessed according to size of charge (net explosive weight), charge radius, height above the bottom, substrate types in the area, and equations linking all these facts. Since the physical structure of the water column is not affected by explosions, only explosions on or near the bottom are expected to potentially impact abiotic substrates. Soft bottoms are preferred for mine shape placement, and as such, most events would occur there, since this habitat type is likely to recover from these activities. Cobble, rocky reef, and other hard-bottom habitat may be scattered throughout the area, but those areas would be avoided during training to the maximum extent practicable. Detonations during training activities are likely to occur in the same general area (Crescent Harbor Explosive Ordnance Disposal training range, Naval Air Station Whidbey Island; and Hood Canal Explosive Ordnance Disposal Training Range, Naval Base Kitsap Bangor), which would further decrease the total area impacted. The recovery for habitats in areas of repeated detonations would be expected to be prolonged.

No training activities with seafloor detonations are proposed in the Offshore Area or Western Behm Canal under any alternative, and no testing activities with seafloor detonations are proposed in any part of the Study Area under any alternative; therefore, only training activities in the Inland Waters portion of the Study Area and testing activities in the Offshore Area (associated with mine countermeasure and neutralization testing) are analyzed for impacts from underwater explosives. Underwater detonations that occur on or near the bottom are used only during mine warfare training activities; all other detonations used in training and testing activities occur in the water column or in the air. The impacts of underwater explosions vary with the bottom habitat type.

3.3.2.1.1.1 Impacts from Explosive Stressors Under Alternative 1

Impacts from Explosive Stressors Under Alternative 1 for Training Activities

Under Alternative 1, the number of proposed training activities involving underwater explosives would remain the same as those proposed in the 2015 NWTT Final EIS/OEIS. Explosive Ordnance Disposal Mine Neutralization Training remains the same as proposed in the 2015 NWTT Final EIS/OEIS. This activity occurs in Crescent Harbor and Hood Canal. The habitat in these areas has not changed.

Although the primary habitat of the Inland Waters where underwater explosives would occur is soft bottom, small portions of hard-bottom habitat are present. As described in the 2015 NWTT Essential Fish Habitat Assessment (EFHA) (U.S. Department of the Navy, 2015), explosive impacts on the hard-bottom habitat could occur by reducing the quality and quantity of non-living habitats that constitute EFH and Habitat Areas of Particular Concern. As concluded in the 2015 NWTT EFHA, these impacts would be permanent but minimal in Crescent Harbor Explosive Ordnance Disposal training range; Naval Air Station Whidbey Island; and Hood Canal Explosive Ordnance Disposal Training Range, Naval Base Kitsap Bangor. In contrast, impacts on the soft bottom were determined to be short term and minimal.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Explosive Stressors Under Alternative 1 for Testing Activities

Under Alternative 1, mine countermeasure and neutralization testing and torpedo explosive testing activities are proposed in the Offshore Area. Mine countermeasure and neutralization testing is a new activity for testing as compared to the 2015 NWTT Final EIS/OEIS (see Table 2.3-2). Navy activities primarily occur in or over the water column, and most are not designed to interact with marine habitats directly. Mine countermeasure and neutralization testing in the Offshore Area would occur in waters 3 nautical miles (NM) or greater from shore at the Quinalt Range Site (outside the Olympic Coast National Marine Sanctuary) or 12 NM or greater from shore elsewhere in the NWTT Offshore Area. Since the physical structure of the water column is not affected by explosions, only explosions on or near the bottom are expected to potentially impact abiotic substrate. Although mine countermeasure and neutralization testing may include the use of inert mine shapes sitting on the seafloor, explosive denotations would only occur in the water column, not directly on the seafloor. In such cases, neutralization of a mine would be simulated using shaped charge denotations, categorized in bin E4 (>2.5-5 pounds net explosive weight), firing projectiles at inert mine shapes sitting on the seafloor. In the Offshore Area where mine countermeasure and neutralization testing is proposed, the habitat is primarily soft bottom. Testing events that include detonations near the bottom in the water column would be infrequent, the percentage of testing area affected would be small, and the disturbed areas are likely soft bottom areas that recover relatively quickly from disturbance. Therefore, in-water explosions would be limited to local and short-term impacts. Details of this analysis can be found in Appendix F (Military Expended Materials and Direct Strike Impact Analyses). Explosive mine countermeasure and neutralization testing would have no effect on rocky reef habitat area of particular concern (HAPC) due to the 350 yard (yd.) live hard bottom mitigation measure implemented to protect these resources (Chapter 5, Mitigation). Impacts to abiotic substrates associated with firing projectiles against bottom-placed inert mine shapes are addressed further in Section 3.3.2.2.2 (Impacts from Military Expended Materials) and Section 3.3.2.2.3 (Impacts from Seafloor Devices).

Torpedo explosive testing would also occur in the water column in depths that would avoid contact with bottom substrates, as described in the 2015 NWTT Final EIS/OEIS (see Table 2.5-2), and although tempo would increase under Alternative 1 when compared to the tempo analyzed in the 2015 NWTT Final EIS/OEIS, activities would occur only in waters greater than 50 NM from shore. Therefore, there would be no impact to marine habitat in the Offshore Area. Explosions associated with testing activities under Alternative 1 would have no impact to marine habitat structure in the Offshore Area.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.1.1.2 Impacts from Explosive Stressors Under Alternative 2

Impacts from Explosive Stressors Under Alternative 2 for Training Activities

Under Alternative 2, the number of proposed training activities that would involve the use of underwater explosives in the Inland Waters would stay the same compared to the number of activities proposed in the 2015 NWTT Final EIS/OEIS (see Table 2.5-1) and would be the same compared to Alternative 1. Therefore, underwater explosions under Alternative 2 would impact marine habitats as described under Alternative 1.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Explosive Stressors Under Alternative 2 for Testing Activities

Under Alternative 2, the number of proposed testing activities that would involve the use of underwater explosives in the Offshore Area would stay the same compared to the number of activities proposed under Alternative 1. Therefore, underwater explosions under Alternative 2 would impact marine habitats as described under Alternative 1.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.1.1.3 Impacts from Explosive Stressors Under the No Action Alternative

Under the No Action Alternative, the proposed training and testing activities would not occur. Explosive stressors associated with the Proposed Action would not be introduced into the marine environment. Therefore, existing environmental conditions would either remain unchanged or would improve slightly after cessation of ongoing training and testing activities.

The No Action Alternative would lessen the potential for impacts on the marine habitat (including EFH) from explosive stressors, but would not measurably improve the condition of marine habitat (including EFH) throughout the Study Area because the impacts are so minimal under Alternatives 1 or 2. These areas have the potential to regain habitat value, but as they are so limited in area, the beneficial impact to the greater ecosystem would be undetectable.

3.3.2.2 Physical Disturbance and Strike Stressors

Bottom habitats could be disturbed by vessel and in-water device strikes, military expended materials, and seafloor devices used for military training and testing. As stated in the 2015 NWTT Final EIS/OEIS, impacts of physical disturbance or strike resulting from military training and testing activities on biogenic soft bottom (e.g., seagrass, macroalgae, etc.) and hard bottom (e.g., corals, sponges, tunicates, oysters, mussels, macroalgae, etc.) habitats are discussed in Sections 3.7 (Marine Vegetation) and 3.8 (Marine Invertebrates), respectively.

No training activities with vessels (see Table 3.0-12) and in-water strikes (see Table 3.0-13) are proposed in the Western Behm Canal Portion of the Study Area under any of the alternatives. Therefore, there would be no impact to marine habitats in the Western Behm Canal portion of the Study Area from training activities with vessels and in-water devices, and these are not discussed further for this area.

Testing activities with vessels and in-water devices would occur in the Western Behm Canal and are therefore analyzed further in the sub sections below. Neither testing nor training activities with military expended materials would occur under any of the alternatives and therefore are not discussed further in regards to the Western Behm Canal.

3.3.2.2.1 Impacts from Vessels and In-Water Devices

3.3.2.2.1.1 Impacts from Vessels and In-Water Devices Under Alternative 1

Impacts from Vessels and In-Water Devices Under Alternative 1 for Training Activities

Under Alternative 1, the number of proposed training activities involving the movement of vessels (see Table 3.0-12) would remain generally consistent with those proposed in the 2015 NWTT Final EIS/OEIS. Vessel movement during training would decrease slightly in the Offshore Area (from 1,156 to 1,144) and in the Inland Waters (from 368 to 327) and would not occur in the Western Behm Canal, resulting in a small net decrease in activities in the Study Area. The activities would occur in the same locations and in a similar manner as were analyzed previously. Most vessel movements and local disturbances of the surface water would be short term in nature, with some temporary increase in suspended sediment in shallow areas. Therefore, vessel movement for training activities in the Offshore Area, Inland Waters, and Western Behm Canal would have no effect on marine habitats under Alternative 1.

Impacts on marine habitats from vessels under Alternative 1 would be minimal and recoverable because (1) vessel activities that could come into contact with marine habitats would be located in previously disturbed areas, (2) most vessel movements and local disturbances of the surface water would be short term in nature with some temporary increase in suspended sediment in shallow areas, and (3) Navy protective measures would be implemented. As shown in the 2015 NWTT Final EIS/OEIS, vessels have no permanent effect on marine habitats. This Supplemental shows that, although the number of events change, the stressor still has no permanent effect on marine habitats. Therefore, vessels would not be expected to affect marine habitats.

Under Alternative 1, the number of proposed training activities involving the use of in-water devices (see Table 3.0-13) would increase compared with those proposed in the 2015 NWTT Final EIS/OEIS. The activities would occur in the same locations and in a similar manner as were analyzed previously. There is an overall increase in the use of in-water devices (from 495 to 541 in the Offshore Area, from 1 every two years to 59 in the Inland Waters, and none in the Western Behm Canal [see Table 3.0-13]); all the new uses are associated with small, slow-moving unmanned underwater vehicles, which all move on the surface of the water or in the water column and do not move quickly enough or push enough water around to disturb bottom habitats. The proposed increase of over 100 in-water devices and vessel movements would not change the conclusion presented in the 2015 NWTT Final EIS/OEIS. As the analysis in the 2015 NWTT Final EIS/OEIS concluded, under Alternative 1, training activities in the Offshore Area would not include activities where in-water devices would contact bottom substrates. Therefore, in-water devices for training activities in the Offshore Area would have no effect on marine habitats under Alternative 1.

In the Inland Waters, the training activities, including maritime homeland defense/security mine countermeasures integrated exercises, were discussed in the 2015 NWTT Final EIS/OEIS and have not changed. Much of these exercises would occur in previously disturbed areas. In-water devices used for training activities could have an effect on marine habitats under Alternative 1. The training activities would occur primarily over soft-bottom habitats. However, a large part of the bottom habitat in the north end of the Puget Sound is rock, and activities could occur there as well. The effect on marine habitats would not alter the marine habitat's ability to function, but would create a disturbance on the soft bottom habitat in the vicinity of the device operation. However, soft-bottom substrate would be expected to shift back following a disturbance through tidal energy or storm generated waves (Davis, 2009; Halpern et al., 2008; Kennett, 1982).

Impacts on marine habitats from in-water devices under Alternative 1 would be minimal and recoverable because (1) in-water activities that could come into contact with marine habitats would be located in previously disturbed areas, (2) in-water devices are deployed at depths where they would not likely come in contact with marine habitat, and (3) Navy protective measures would be implemented. As shown in the 2015 NWTT Final EIS/OEIS, in-water devices have no permanent effect on marine habitats. This Supplemental shows that, although the number of events change, the stressor still has no permanent effect on marine habitats. Therefore, in-water devices would not be expected to affect marine habitats.

Any activities' conditions that might affect EFH would not change substantively from the 2015 NWTT Final EIS/OEIS preferred alternative; therefore, no new impacts are expected. The Navy completed a new EFHA in 2020, with conclusions consistent with the EFHA from 2015 and with this Supplemental. Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Vessels and In-Water Devices Under Alternative 1 for Testing Activities

Under Alternative 1, the number of proposed testing activities involving the movement of vessels (see Table 3.0-12) would increase compared with those proposed in the 2015 NWTT Final EIS/OEIS. Vessel movement would increase in the Offshore Area (from 181 to 283 annual activities), in the Inland Waters (from 916 to 918), and in the Western Behm Canal (from 60 to 63). When considering testing activities under Alternative 1 in all locations, there is a net increase of 107 events, which is an approximately 9 percent increase in activities involving the movement of vessels in the Study Area.

The activities would occur in the same locations and in a similar manner as were analyzed previously. In spite of these increases, and as described in the 2015 NWTT Final EIS/OEIS, these vessel activities remain unlikely to impact marine habitats. Therefore, vessel movement for testing activities in the Offshore Area, Inland Waters, and Western Behm Canal would have no effect on marine habitats under Alternative 1.

Impacts on marine habitats from vessels under Alternative 1 would be minimal and recoverable because (1) vessel activities that could come into contact with marine habitats would be located in previously disturbed areas, (2) most vessel movements and local disturbances of the surface water would be short term in nature with some temporary increase in suspended sediment in shallow areas, and (3) Navy protective measures would be implemented. As shown in the 2015 NWTT Final EIS/OEIS, vessels have no permanent effect on marine habitats. This Supplemental shows that, although the number of events

change, the stressor still has no permanent effect on marine habitats. Therefore, vessels would not be expected to affect marine habitats.

Under Alternative 1, the number of proposed testing activities involving the in-water devices (see Table 3.0-13) would increase compared with those proposed in the 2015 NWTT Final EIS/OEIS. In-water device use would increase in the Offshore Area (from 156 to 215 annual activities), in the Inland Waters (from 576 to 664), and in the Western Behm Canal (from 8 to 19). When considering testing activities under Alternative 1 in all locations, there is a net increase of 158 events, which is an approximately 21 percent increase in activities involving the use of in-water devices in the Study Area. The activities would occur in the same locations and in a similar manner as were analyzed previously. In spite of these increases, and as described in the 2015 NWTT Final EIS/OEIS, these in-water device activities remain unlikely to permanently impact marine habitats.

For the current Proposed Action, the same testing activities in the Offshore Area as described in the 2015 NWTT Final EIS/OEIS would include activities where in-water devices would contact bottom substrates, such as with certain types of unmanned underwater vehicles in the Quinault Range Site at Pacific Beach in the tidal zone. This portion of the Study Area is predominately sandy bottom. These in-water devices used for testing activities could have an effect on marine habitats under Alternative 1. This effect would not alter the marine habitat's ability to function, but would create a disturbance on the soft-bottom habitat in the vicinity of the device operation. However, sand substrate would be expected to shift back following a disturbance through tidal energy or storm generated waves (Davis, 2009; Halpern et al., 2008; Kennett, 1982).

Testing activities in the Inland Waters portion of the Study Area would include activities using in-water devices that contact bottom substrates. The activities would occur primarily over soft-bottom habitat, and impacts would not alter the marine habitat's ability to function, but would create a disturbance on the soft-bottom habitat in the vicinity of the device operation. However, the soft-bottom substrate would be expected to shift back following a disturbance through tidal energy, bottom currents in deeper areas, or storm generated waves (Davis, 2009; Halpern et al., 2008; Kennett, 1982).

Marine habitats in the Western Behm Canal portion of the Study Area would not be impacted by in-water devices testing activities because the activities would not contact bottom substrates. Although the sediment in the Western Behm Canal is variable across the seafloor, generally sediments range from soft sediments to hard exposed bedrock. Soft-bottom sediment is expected to recover after a temporary disturbance due to normal sediment transport.

Impacts on marine habitats from in-water devices under Alternative 1 would be minimal and recoverable because (1) in-water activities that could come into contact with marine habitats would be located in previously disturbed areas, (2) in-water devices are deployed at depths where they would not likely come in contact with marine habitat, and (3) Navy protective measures would be implemented. As shown in the 2015 NWTT Final EIS/OEIS, in-water devices have no permanent effect on marine habitats. This Supplemental shows that, although the number of events change, the stressor still has no permanent effect on marine habitats. Therefore, in-water devices would not be expected to affect marine habitats.

Any activities' conditions that might affect EFH would not change substantively from the 2015 NWTT Final EIS/OEIS preferred alternative; therefore, no new impacts are expected. The Navy completed a new EFHA in 2020, with conclusions consistent with the EFHA from 2015 and with this Supplemental. Mitigation measures, as described in Appendix K (Geographic Mitigation Assessment), will avoid or

reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.1.2 Impacts from Vessels and In-Water Devices Under Alternative 2

Impacts from Vessels and In-Water Devices Under Alternative 2 for Training Activities

Under Alternative 2, the number of proposed training activities involving the movement of vessels (see Table 3.0-12) would increase in the Offshore Area (from 1,156 to 1,249) and increase in the Inland Waters (from 368 to 409) compared with those proposed in the 2015 NWTT Final EIS/OEIS. Overall, vessel movement would increase slightly (from 1,524 to 1,658) in the Study Area (Table 3.0-12) compared to those proposed in the 2015 NWTT Final EIS/OEIS. This would be an increase compared to Alternative 1 activities, which are proposed at 1,471.

Under Alternative 2, the number of proposed training activities involving the movement of in-water devices would increase in the Offshore Area (from 495 to 547) and increase in the Inland Waters (from 1 every two years to 73 per year) compared with those proposed in the 2015 NWTT Final EIS/OEIS. In-water device movement would increase slightly from (600 to 620) in the Study Area compared to Alternative 1 (from 541 to 547 in the Offshore Area and from 59 to 73 in the Inland Waters) (Table 3.0-13). All of the increased in-water device activities are associated with small, slow-moving unmanned underwater vehicles, which all move on the surface of the water or in the water column and do not move quickly enough or push enough water around to disturb bottom habitats. The proposed increase of 124 in-water devices used under Alternative 2 compared to the 2015 NWTT Final EIS/OEIS would not change that conclusion presented in the 2015 NWTT Final EIS/OEIS. Therefore, just as described for Alternative 1, impacts on marine habitats in the Offshore Area, Inland Waters, and Western Behm Canal from physical disturbance and strike under Alternative 2 would be minimal and recoverable for the same list of reasons presented under Alternative 1. Therefore, vessels and in-water devices would not be expected to affect marine habitats.

Any activities' conditions that might affect EFH would not change substantively from the 2015 NWTT Final EIS/OEIS preferred alternative; therefore, no new impacts are expected. The Navy completed a new EFHA in 2020, with conclusions consistent with the EFHA from 2015 and with this Supplemental. Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Vessels and In-Water Devices Under Alternative 2 for Testing Activities

Under Alternative 2, the number of proposed testing activities involving the movement of vessels (see Table 3.0-12) would increase compared to those proposed in the 2015 NWTT Final EIS/OEIS and increase compared to Alternative 1. Vessel movement would increase in the Offshore Area (from 283 to 295), in the Inland Waters (from 918 to 1,028), and the Western Behm Canal (from 63 to 77) compared to Alternative 1. There is also an overall increase in the use of in-water devices compared to Alternative 1 (from 215 to 224 in the Offshore Area, from 664 to 689 in the Inland Waters, and unchanged in the Western Behm Canal [see Table 3.0-13]). The activities would occur in the same locations and in a similar manner as were analyzed previously. In spite of these increases, and as described in the 2015 NWTT Final EIS/OEIS, impacts to marine habitats during vessel and in-water device activities would be unlikely. The proposed increase of vessel and in-water device activities would not change that

conclusion. Therefore, impacts on marine habitats from physical disturbance and strike under Alternative 2 would be minimal and recoverable because (1) vessel and in-water activities that could come into contact with marine habitats would be located in previously disturbed areas, (2) most vessel movements and local disturbances of the surface water would be short term in nature with some temporary increase in suspended sediment in shallow areas, (3) in-water devices would be deployed at depths where they would not likely come in contact with marine habitat, and (4) Navy protective measures would be implemented. Therefore, vessels and in-water devices would not be expected to affect marine habitats.

Any activities' conditions that might affect EFH would not change substantively from the 2015 NWTT Final EIS/OEIS preferred alternative; therefore, no new impacts are expected. The Navy completed a new EFHA in 2020, with conclusions consistent with the EFHA from 2015 and with this Supplemental. Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.1.3 Impacts from Vessels and In-Water Devices Under the No Action Alternative

Under the No Action Alternative, the proposed training and testing activities would not occur. Physical disturbance and strike stressors from in-water devices associated with the Proposed Action would not be introduced into the marine environment. Therefore, existing environmental conditions would either remain unchanged or would improve slightly after cessation of ongoing training and testing activities.

The No Action Alternative would lessen the potential for impacts on the marine habitat (including EFH) from physical disturbance and strike stressors, but would not measurably improve the condition of marine habitat (including EFH) throughout the Study Area because the impacts are so minimal under Alternatives 1 or 2. These areas have the potential to regain habitat value but, as they are so limited in area, the beneficial impact to the greater ecosystem would be undetectable.

3.3.2.2.2 Impacts from Military Expended Materials

Military expended materials that could impact marine habitats include non-explosive practice munitions (Table 3.0-14), other military materials that are expended or recovered (Table 3.0-15), explosive munitions that may result in fragments (Table 3.0-16), and targets that are expended or recovered (Table 3.0-17). The Navy makes best efforts to recover all targets, unless they are specified as "expended" in the tables in Chapter 3 (Affected Environment and Environmental Consequences).

3.3.2.2.2.1 Impacts from Military Expended Materials Under Alternative 1

Impacts from Military Expended Materials Under Alternative 1 for Training Activities

Under Alternative 1, the number of military materials that would be expended during training activities is generally consistent with the number proposed for use in the 2015 NWTT Final EIS/OEIS. When the amount of military expended materials from Tables 3.0-14 through 3.0-16 are combined, the number of items proposed to be expended under Alternative 1 decreases compared to ongoing activities.

Approximately 206,000 military items would be expended annually in the Offshore Area during training activities, which would result in a total impact area of approximately 5 acres (ac.) (as shown in Table F-2 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The activities that expend military materials would occur in the same locations and in a similar manner as were analyzed previously. The majority of military training items would be expended in the open ocean, where

substrates would primarily be clays and silts. Military expended material expended near the coastal portions of the Offshore Area would be limited to small-caliber projectiles, flares, sonobuoys, and target fragments. These materials would be expended in an area of soft-bottom habitat, mainly sand, which is dynamic in nature. These materials would be small, and would typically be covered by sediment (through wave, tide, current, storm, or normal water movements of sediment or storm generated waves) or colonized by benthic organisms. The total impact area of military expended materials from training activities would cover approximately 0.000005 percent of the Offshore Area (spread out over the entire Offshore portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. Therefore, under Alternative 1, military material expended by training activities in the Offshore Area would have a temporary impact on marine habitats.

In the Inland Waters, military expended material could act as anchor points in the shifting bottom habitats, and could be colonized by benthic organisms. Approximately 3,076 military items would be expended annually in the Inland Waters during training activities, which would result in a total impact area of approximately 0.01 ac. (as shown in Table F-2 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The small size, and small total footprint compared to available habitat, of military expended materials would not change the habitat structure. The total impact area of military expended materials from training activities would cover approximately 0.000002 percent of the Inland Waters Area (spread out over the entire Inland Waters in-water portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. Therefore, military expended material from training activities in the Inland Waters would have no adverse impact on marine habitats.

Impacts on marine habitats from military expended materials under Alternative 1 would be minimal and recoverable because of the small area of impact that military expended materials would have over the entire Study Area, and because military expended material would be colonized by benthic organisms; therefore, they would not be expected to affect marine habitats. The 2015 NWTT EFHA stated that military expended materials may adversely affect substrate EFH, however, these effects ranged from minimal and long term to permanent depending on where the military expended material fell and if it was larger or smaller in impact footprint.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Military Expended Materials Under Alternative 1 for Testing Activities

Under Alternative 1, the number of military materials that would be expended during testing activities is generally consistent with the number proposed for use in the 2015 NWTT Final EIS/OEIS. When the amount of military expended materials from Tables 3.0-14 through 3.0-16 are combined, the number of items proposed to be expended under Alternative 1 decreases compared to ongoing activities. Approximately 14,000 military items would be expended annually in the Offshore Area during testing activities, which would result in a total impact area of approximately 2.72 ac. (as shown in Table F-3 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The activities that expend military materials would occur in the same locations and in a similar manner as were analyzed previously for training activities. However, new testing activities in the Offshore Area, including mine countermeasure and neutralization testing (e.g., explosive fragments from neutralizer), and new military expended materials from Kinetic Energy Weapon Testing (e.g., kinetic energy rounds and large-caliber projectiles) were analyzed in Appendix F (Military Expended Material and Direct Strike Impact Analyses).

Military expended materials have the potential to adversely affect substrate EFH if physical disturbance impairs the substrate's ability to function as a habitat. Disturbances can result from several sources, including the physical impact of the expended material contacting the substrate, the covering of the substrate by the expended material, or the alteration of the substrate from one type to another (e.g., converting soft bottom substrate into hard bottom resulting from solid expended materials overlying soft substrates). The likelihood of military expended materials adversely impacting substrates as they come into contact with the seafloor depends on the size, type, mass, and speed of the material; water depth; the amount of material expended; and the type of substrate, as well as the hydrodynamic regime of the area (high vs. low currents). In the Offshore Area where mine countermeasure and neutralization testing is proposed, the habitat is primarily soft bottom (e.g., sand). Sand is dynamic in nature, and the materials would be small and typically would be covered through wave, tide, current, storm, or normal water movements of sediment. Military expended materials are not expected to change the overall habitat structure of the substrate; impacts would be minimal and short term to permanent. Military expended materials would have no effect on rocky reef HAPC due to the 350 yd. live hard bottom mitigation measure implemented to protect these resources (Chapter 5, Mitigation Measures).

The total impact area of military expended materials from testing activities would cover approximately 0.000003 percent of the Offshore Area (spread out over the entire Offshore portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. Therefore, the change in number of military expended material due to testing activities would be minor.

As described under training activities for military expended materials, the majority would be expended in open oceans where habitats are primarily soft bottom of the Offshore Area. Sand is dynamic in nature, and the materials would be small and typically would be covered by sediment through wave, tide, current, storm, or normal water movements of sediment or storm generated waves or colonized by benthic organisms. The small size of military expended materials, and the placement of them on soft mobile sediments, would not change the habitat structure. Therefore, military material expended during testing activities in the Offshore Area would affect marine habitats but would have no adverse impact.

As with training activities, military expended materials used during testing activities would be expended primarily over soft-bottom sediment which would be expected to shift back following a disturbance. Approximately 3,000 military items would be expended annually in the Inland Waters during testing activities, which would result in a total impact area of approximately 6.4 ac. (as shown in Table F-3 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The total impact area of military expended materials from testing activities would cover approximately 0.0009 percent of the Inland Waters Area (spread out over the entire Inland Waters in-water portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. The small size, and small total footprint compared to available habitat, of military expended materials would not change the habitat structure. Therefore, military expended material from testing activities in the Inland Waters would be minimal.

The 2015 NWTT EFHA stated that military expended materials may adversely affect substrate EFH, however, these effects ranged from minimal and long term to permanent depending on where the military expended material fell and if it was larger or smaller in impact footprint.

Mitigation measures, as described in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the

water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.2 Impacts from Military Expended Materials Under Alternative 2

Impacts from Military Expended Materials Under Alternative 2 for Training Activities

Under Alternative 2, the number of military materials that would be expended during training activities is generally consistent with the number proposed for use in the 2015 NWTT Final EIS/OEIS and varies between slight increases and decreases compared to Alternative 1. Under Alternative 2, however, there would be 43,112 medium-caliber (explosive) projectiles compared to 26,410 in the Offshore Area under Alternative 1, and 6,057 small-caliber projectile casings expended in the Inland Waters compared to 3,036 under Alternative 1. Approximately 206,000 military items would be expended annually in the Offshore Area during training activities, which would result in a total impact area of approximately 6.08 ac. (as shown in Table F-2 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The activities that expend military materials would occur in the same locations and in a similar manner as were analyzed previously and the impacts to marine habitats would be expected to be the same. The total impact area of military expended materials from training activities would cover approximately 0.000006 percent of the Offshore Area (spread out over the entire Offshore portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area.

Approximately 6,000 military items would be expended annually in the Inland Waters during training activities, which would result in a total impact area of approximately 0.01 ac. (as shown in Table F-2 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The total impact area of military expended materials from training activities would cover approximately 0.000002 percent of the Inland Waters Area (spread out over the entire Inland Waters in-water portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. Therefore, impacts on marine habitats from military expended materials under Alternative 2 would be minimal and recoverable because of the small area of impact that military expended materials would have over the entire Study Area, and because military expended material would be colonized by benthic organisms, since they would be anchor points in the shifting bottom habitats.

The 2015 NWTT EFHA stated that military expended materials may adversely affect substrate EFH, however, these effects ranged from minimal and long term to permanent depending on where the military expended material fell and if it was larger or smaller in impact footprint.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Military Expended Materials Under Alternative 2 for Testing Activities

Under Alternative 2, the number of military materials that would be expended during testing activities is generally consistent with the number proposed for use in the 2015 NWTT Final EIS/OEIS and under Alternative 1, with the exception of sonobuoys in the Offshore Area and anchors in the Inland Waters increasing under Alternative 2 compared to Alternative 1. Approximately 19,000 military items would be expended annually in the Offshore Area during testing activities, which would result in a total impact area of approximately 2.91 ac. (as shown in Table F-3 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). Sub-surface stationary targets are typically recovered, and while they are appropriately included in the military expended materials category, pose no actual risk of physical

disturbance and strike to marine habitats. When these are removed from the analysis, the military expended materials are reduced. The total impact area of military expended materials from testing activities would cover approximately 0.000003 percent of the Offshore Area (spread out over the entire Offshore portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area.

As with training activities, military expended materials used during testing activities would be expended primarily over soft-bottom sediment which would be expected to shift back following a disturbance. Approximately 3,000 military items would be expended annually in the Inland Waters during testing activities, which would result in a total impact area of approximately 8.34 ac. (as shown in Table F-3 of Appendix F [Military Expended Material and Direct Strike Impact Analyses]). The total impact area of military expended materials from testing activities would cover approximately 0.001 percent of the Inland Waters Area (spread out over the entire Inland Waters in-water portion of the Study Area), which would be a small fraction of the total sea surface area of the Study Area. The activities that expend military materials would occur in the same locations and in a similar manner as were analyzed previously. Impacts on marine habitats from military expended materials under Alternative 2 would be minimal and recoverable because of the small area of impact that military expended materials would have over the entire Study Area, and because military expended material would be colonized by benthic organisms, since they would provide anchor points in the shifting bottom habitats.

The 2015 NWTT EFHA stated that military expended materials may adversely affect substrate EFH, however, these effects ranged from minimal and long term to permanent depending on where the military expended material fell and if it was larger or smaller in impact footprint.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.2.3 Impacts from Military Expended Materials Under the No Action Alternative

Under the No Action Alternative, the proposed testing and training activities would not occur. Physical disturbance and strike stressors from military expended materials associated with the Proposed Action would not be introduced into the marine environment. Therefore, existing environmental conditions would either remain unchanged or would improve slightly after cessation of ongoing training and testing activities.

The No Action Alternative would lessen the potential for impacts on the marine habitat (including EFH) from physical disturbance and strike stressors, specifically from military expended materials, but would not measurably improve the condition of marine habitat (including EFH) throughout the Study Area because the impacts are so minimal under Alternatives 1 or 2.

3.3.2.2.3 Impacts from Seafloor Devices

Several training and testing activities include the use of seafloor devices (see Table 3.0-18)—items that may contact the ocean bottom temporarily. The activities and the specific seafloor devices are (1) precision anchoring training, where anchors are lowered to the seafloor and recovered; (2) Explosive Ordnance Disposal mine countermeasures training exercises, where some mine targets may be moored to the seafloor; (3) crawler Unmanned Underwater Vehicle tests in which Unmanned Underwater

Vehicles “crawl” across the seafloor; and (4) various testing activities where small anchors are placed on the seafloor to hold instrumentation in place.

3.3.2.2.3.1 Impacts from Seafloor Devices Under Alternative 1

Impacts from Seafloor Devices Under Alternative 1 for Training Activities

No training activities with seafloor devices are proposed in the Offshore Area under Alternative 1. Therefore, seafloor devices for training activities would have no effect on marine habitats in the Offshore Area under Alternative 1.

Under Alternative 1, when compared to the 2015 NWTT Final EIS/OEIS, the number of annual training activities that include the use of anchors (as seafloor devices) would increase from 10 to 40 (see Table 3.0-18). The activity is comprised of a vessel navigating to a precise, pre-determined location and releasing the ship’s anchor to the bottom. The anchor is later recovered, and the activity is complete. Training events that include seafloor devices in the Inland Waters portion of the Study Area are infrequent, the percentage of training area affected is small, and the effects are localized within specific training areas, so the soft-bottom substrates of disturbed areas would be expected to recover their previous structure. The effect on marine habitats would not alter the marine habitat’s ability to function, but would create a disturbance on the soft-bottom habitat in the vicinity of the activity. However, sand substrate would be expected to shift back following a disturbance through tidal energy or storm-generated waves. Soft sediment covers a large portion within the Inland Waters, with sand and mud prevailing in the eastern regions.

Mine countermeasures training exercises involve non-permanent mine shapes that are laid in various places on the seafloor and recovered using normal assets with diver involvement. The mine shapes vary in size between 1- and 2.5-meters circumference. These activities would be conducted once every other year. Impacts on marine habitats from seafloor devices under Alternative 1 would be minimal and recoverable because they also would be laid in such a way that they would not disturb bottom sediment to an extent beyond temporary impacts; also, for seafloor devices such as mine countermeasures, impacts would occur in previously disturbed locations. The 2015 NWTT EFHA found that seafloor devices have no effect on water column EFH, but may adversely affect substrate EFH. These effects, however, were found to be minimal and temporary.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Seafloor Devices Under Alternative 1 for Testing Activities

Under Alternative 1, when compared to the 2015 NWTT Final EIS/OEIS, the number of testing activities that include the use of seafloor devices would decrease in the Offshore Area and increase in the Inland Waters (as shown in Table 3.0-18). The majority of the activities involve the temporary placement of small anchors on the seafloor. These anchors enter the water slowly, reducing any risk of injury to marine habitats. When the test is completed, the anchors are recovered, again at a slow speed.

Seafloor devices utilized in the Mine Countermeasure and Neutralization testing activity include the placement of anchors and mine shapes. Mine shapes are typically deployed via surface vessels or fixed-wing aircraft, and are non-explosive devices. Most moored mines deployed from surface vessels are secured with up to a 2,700 pound concrete mooring block (approximately 30 inches to a side). Mine

shapes are normally deployed over soft sediments and are usually retrieved following the completion of the activity. Seafloor devices have the potential to adversely affect substrate and benthic habitats due to the placement of seafloor devices on the benthos, but impacts would be localized to the impact area and would not result in local community shift. The placement of seafloor devices would temporarily impair the ability of the substrate to function as a habitat for as long as the seafloor device is in place. Substrate habitats would be expected to recover following the disturbance, resulting in only short-term impacts on the habitat. Seafloor devices would have no effect on rocky reef HAPC due to the 350 yd. live hard bottom mitigation measure implemented to protect these resources (Chapter 5, Mitigation Measures).

In the Offshore Area and Inland Waters, seafloor devices for testing activities under Alternative 1 have the potential to affect marine habitat structure in the Study Area, but impacts would be local disturbance to the impact area, would not result in local community shift, and the substrate would be expected to shift back following the disturbance.

The testing activities in the Western Behm Canal would include activities where seafloor devices would contact bottom substrates. The effect on marine habitats would not alter the marine habitat's ability to function, but it would create a disturbance on the hard- or soft-bottom habitat in the vicinity of the activity. However, sand substrate would be expected to shift back following a disturbance through tidal energy or storm-generated waves, and seafloor devices are not expected to cause permanent damage to hard-bottom habitat. Therefore, seafloor devices for testing activities under Alternative 1 in the Western Behm Canal have the potential to affect marine habitat structure in the Study Area, but impacts would be local disturbance to the impact area, would not result in local community shift, and the substrate would be expected to shift back following the disturbance.

Seafloor devices were found to have no effect on water column EFH, but may adversely affect substrate EFH. These effects, however, were found to be minimal and temporary.

Mitigation measures, as described in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.3.2 Impacts from Seafloor Devices Under Alternative 2

Impacts from Seafloor Devices Under Alternative 2 for Training Activities

Under Alternative 2, when compared to the 2015 NWTT Final EIS/OEIS, the number of training activities that include the use of seafloor devices would be the same as described under Alternative 1, with the exception of an increase in mine shapes in the inland waters. Because of the nature of the activities, marine habitats may be impacted by seafloor devices temporarily increasing the turbidity (sediment suspended in the water); however, seafloor devices would be used in previously disturbed areas and therefore would not be expected to affect marine habitats. As discussed under Alternative 1, mine countermeasures training exercises involve non-permanent mine shapes that are laid in various places on the seafloor and recovered using normal assets with diver involvement. The mine shapes vary in size between 1- and 2.5-meters circumference. These activities would be conducted once every other year. Impacts on marine habitats from seafloor devices under Alternative 2 would be minimal and recoverable because they also would be laid in such a way that they would not disturb bottom sediment to an extent beyond temporary impacts; also, for seafloor devices such as mine countermeasures, impacts would occur in previously disturbed locations.

Seafloor devices were found to have no effect on water column EFH, but may adversely affect substrate EFH. These effects, however, were found to be minimal and temporary.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

Impacts from Seafloor Devices Under Alternative 2 for Testing Activities

Under Alternative 2, when compared to the 2015 NWTT Final EIS/OEIS, the number of testing activities that include the use of seafloor devices would increase from Alternative 1 in the Inland Waters. The majority of the activities involve the temporary placement of small anchors on the seafloor. These anchors enter the water slowly, reducing any risk of injury to marine vegetation. When the test is completed, the anchors are recovered, again at a slow speed. In the Offshore Area and Inland Waters, seafloor devices for testing activities under Alternative 2 have the potential to affect marine habitat structure in the Study Area, but impacts would be local disturbance to the impact area, would not result in local community shift, and the substrate would be expected to shift back following the disturbance.

Seafloor devices were found to have no effect on water column EFH, but may adversely affect substrate EFH. These effects, however, were found to be minimal and temporary.

Mitigation measures, as defined in Appendix K (Geographic Mitigation Assessment), will avoid or reduce potential impacts on live hard bottom, artificial reefs, and shipwrecks. Impacts on EFH in the water column are summarized in corresponding resource sections (e.g., Section 3.8, Marine Invertebrates; and Section 3.9, Fishes).

3.3.2.2.3.3 Impacts from Seafloor Devices Under the No Action Alternative

Under the No Action Alternative, the proposed training and testing activities would not occur. Physical disturbance and strike stressors from seafloor devices associated with the Proposed Action would not be introduced into the marine environment. Therefore, existing environmental conditions would either remain unchanged or would improve slightly after cessation of ongoing training and testing activities.

The No Action Alternative would lessen the potential for impacts on the marine habitat (including EFH) from physical disturbance and strike stressors, but would not measurably improve the condition of marine habitat (including EFH) throughout the Study Area because the impacts are so minimal under Alternatives 1 or 2.

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