APPENDIX J
CUMULATIVE IMPACTS SUPPORTING INFORMATION

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Draft

Supplemental Environmental Impact Statement/ Overseas Environmental Impact Statement Atlantic Fleet Training and Testing

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J CUMULATIVE IMPACTS SUPPORTING INFORMATION

J.1 REASONABLY FORESEEABLE FUTURE ACTIVITIES

Table J.1-1 through Table J.1-23 present detailed information on the reasonably foreseeable future activities discussed in Chapter 4 (Cumulative Impacts).

J.1.1 MILITARY MISSION, TRAINING, AND TESTING ACTIVITIES

Table J.1-1: Atlantic Fleet Training and Testing

RFFA	*Atlantic Fleet Training and Testing*		
Location	Approximately 2.6 million NM^2 over the air and seaspace in the Atlantic Ocean along the eastern coast of the United States, in the Gulf of Mexico, and in portions of the Caribbean Sea – at existing at-sea Range Complexes and testing ranges, in high-seas areas, and at Navy pierside locations, within port transit channels, near civilian ports, and in bays, harbors, and inland waterways (see Figure 2.1-1).		
Project Description	The Navy At Sea Policy directs the Navy to develop a comprehensive, programmatic approach to environmental compliance for exercises and training at sea (U.S. Department of the Navy, 2000). The Action Proponents have evaluated impacts from past activities as well as present military readiness activities based on changing operational requirements, new platforms, and new systems. The Action Proponents use these analyses to support incidental take authorizations under the MMPA. Prior to this Supplemental EIS/OEIS, the 2018 *Final Atlantic Fleet Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement* (hereinafter referred to as the 2018 Final EIS/OEIS) provided the most recent comprehensive analysis of the full geographic scope of areas where Action Proponent military readiness activities have historically occurred as well as those projected for the reasonably foreseeable future (U.S. Department of the Navy, 2018). The full breadth of activities, and their potential impacts, were similar in nature to those analyzed in this Supplemental EIS/OEIS, and 49,225 hours of hull-mounted mid-frequency sonar use were estimated to occur between 2013 and 2018; although, the actual hours of sonar use were significantly lower (refer to Figure 2.5-1 through Figure 2.5-3 in the 2018 Final EIS/OEIS). Likewise, the detonation of a maximum of 177,749 explosives was evaluated over a 5-year period, 85% of which were Explosive Class 1 (0.1 to 0.25 lb.) (2018 Final EIS/OEIS Section 2.5.4, Comparison of Proposed Sonar and Explosive Use in the Action Alternatives to the 2013 – 2018 MMPA Permit Allotment). In August 2018, the MMPA was amended to allow for 7-year authorizations for military readiness activities, increasing the previous authorization timeframe from 5 years. As such, NMFS extended the MMPA incidental take permit for AFTT from November 2023 to November 2025 (National Marine Fisheries Service, 2018).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	• Mitigation measures established for most in-water activities, including marine and cultural resource mitigation areas, and visual observations for specific marine species. • A scientific advisory group of leading marine mammal scientists assisted in the development of an Integrated Comprehensive Monitoring Program, which coordinated monitoring efforts across all regions where the Navy trains. • Monitoring occurred during training and testing events and generally through the Integrated Comprehensive Monitoring Program.		

Notes: % = percent; AFTT = Atlantic Fleet Training and Testing; EIS = Environmental Impact Statement; lb. = pound; MMPA = Marine Mammal Protection Act; NM^2 = square nautical miles; NMFS = National Marine Fisheries Service; OEIS = Overseas Environmental Impact Statement; RFFA = reasonably foreseeable future action

Table J.1-2: Eglin Gulf Test and Training Range

RFFA	*Eglin Gulf Test and Training Range*		
Location	Warning Areas (W-151, W-168, and W-470) and Eglin Water Test Areas WTA-1 through WTA-6, Undersea, Surface, Airspace, Valparaiso, Florida.		
Project Description	The Air Force has consulted with the National Marine Fisheries Service regarding effects to marine mammals and sea turtles through a Letter of Authorization that provides authorization for takes of marine mammals by Level A and Level B harassment for the period 2023 to 2030. This request for authorization includes takes of three species of marine mammals, Rice's whale, common bottlenose dolphins, and Atlantic spotted dolphins (National Oceanic and Atmospheric Administration, 2022). Eglin Air Force Base is proposing to create and use a new, separate area within Eglin Gulf Test and Training Range that would be used for live missions in addition to the existing live impact area, referred to as the east live impact area. The east live impact area is located approximately 40 NM southeast of the existing live impact area: The new Letter of Authorization covers activities at the current Eglin Gulf Test and Training Range and the new east live impact area, for taking of marine mammals incidental to the following activities (National Oceanic and Atmospheric Administration, 2022). • 52nd Weapons Evaluation Group missions that involves an air-to-ground Weapon System Evaluation Program known as Combat Hammer, which tests various types of munitions against small target boats and air-to-air missile testing known as Combat Archer. • The Air Force Special Operations Command proposes to continue training missions in Eglin Gulf Test and Training Range primarily involving air-to-surface gunnery, bomb, and missile exercises including AC-130 gunnery training, CV-22 training, and bomb and missile training. • 96th Operations Group missions including AC-130 gunnery testing against floating marker targets on the water surface and MQ-9 air-to-surface testing. • 780th Test Squadron Precision Strike Weapons testing including air-launched cruise missile tests, air-to-air missile tests, Longbow and Joint air-to-Ground Missile testing; Spike Non-Line of Sight air-to-surface missile testing, Patriot missile testing, Hypersonic Weapon Testing, sink at sea live-fire training exercises, and testing using live and inert munitions against targets on the water surface. • Naval School Explosive Ordnance Disposal training missions that involve students diving and placing small explosive charges adjacent to inert mines.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Pre- and post-event monitoring; visual and acoustic observation for marine mammals and turtles (including indicators such as *Sargassum* rafts and large schools of fish, jellyfish, and diving birds); ceasing of activities in response to sightings.		

Notes: NM = nautical miles; RFFA = reasonably foreseeable future action

Table J.1-3: Undersea Warfare Training Range

RFFA	***Undersea Warfare Training Range***		
Location	500 NM^2 east of Naval Air Station Jacksonville, Florida, operating area Undersea (120 to 900 ft. deep)		
Project Description	The use of the range for anti-submarine warfare military readiness activities is analyzed in this Supplemental EIS/OEIS as part of the Proposed Action (Chapter 2, Description of Proposed Action and Alternatives). Construction began in fiscal year 2014, and initial operational capability was achieved in fiscal year 2019. In 2022, the Navy achieved full operational capability on critical underwater training range.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C	O	O
Summary of Impact Minimization and Mitigation Measures	Construction was not to occur during calving months to avoid disturbance to the North Atlantic right whale.		

Notes: EIS = Environmental Impact Statement; ft. = feet; NM^2 = square nautical miles; OEIS = Overseas Environmental Impact Statement; RFFA = reasonably foreseeable future action

Table J.1-4: Joint Logistics Over-the-Shore Training

RFFA	***Joint Logistics Over-the-Shore Training***		
Location	Joint Expeditionary Base Little Creek-Fort Story, Virginia, or Marine Corps Base Camp Lejeune, North Carolina		
Project Description	Joint Logistics Over-the-Shore Training may be conducted jointly by the Navy, Marine Corps, and Army and consists of loading/unloading (ship to shore movement) of cargo and personnel without fixed port facilities and in undeveloped/unimproved nearshore environments.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Dune and seabeach amaranth avoidance; observation for marine mammals and turtles; ceasing of activities in response to sightings.		

Note: RFFA = reasonably foreseeable future action

Table J.1-5: Army-Langley Eustis

RFFA	***Army-Langley Eustis***		
Location	VACAPES Range Complex (Warning Area 50), Hampton, Virginia		
Project Description	The Army conducts approximately 10 surface-to-surface gunnery training events per year in the VACAPES Range Complex, which generally includes firing approximately 2,400 rounds (.50 caliber) from a Landing Craft Utility vessel at floating, plastic drum targets that are recovered after use.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Requires standard 200-yard safety zone.		

Notes: RFFA = reasonably foreseeable future action; VACAPES = Virginia Capes

Table J.1-6: United States Coast Guard

RFFA	***United States Coast Guard***		
Location	U.S. Coast Guard District 1 (Maine to New York), District 5 (New Jersey to North Carolina), District 7 (South Carolina to Florida, including the Caribbean), and District 8 (Alabama to New Mexico)		
Project Description	The U.S. Coast Guard performs law enforcement, maritime response, maritime prevention, maritime transportation system management, maritime security operations, and defense missions in river, lake, estuarine, coastal, and offshore waters. U.S. Coast Guard training and mission activities include boat and ship exercises; fixed-wing aircraft and helicopter activities; gunnery, including munitions and other expendables such as signal flares and marine markers; and the use of high-frequency and ultra-high-frequency sonar detection systems.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Observation for marine mammals and turtles; ceasing of activities in response to sightings.		

Notes: RFFA = reasonably foreseeable future action; U.S. = United States

Table J.1-7: National Aeronautics and Space Administration

RFFA	***National Aeronautics and Space Administration***		
Location	Offshore Wallops Flight Facility, Virginia and Kennedy Space Center at Cape Canaveral, Florida		
Project Description	The National Aeronautics and Space Administration has designated downrange danger zones and restricted areas that include hazard and debris areas from rocket tests, satellite launches, and other range mission activities.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	NMFS concluded that Wallops operations are infrequent enough not to warrant the need for an Incidental Take Statement for marine mammals or sea turtles from over-ocean rocket operations (National Aeronautics and Space Administration, 2018).		

Notes: NMFS = National Marine Fisheries Service; RFFA = reasonably foreseeable future action

J.1.2 U.S. Outer Continental Shelf Energy Development

Table J.1-8: Oil and Gas Lease

RFFA	*Oil and Gas Lease*		
Location	Federal Waters: Gulf of Mexico Outer Continental Shelf, approximately 200 to 350 NM seaward from state (Texas, Louisiana, Alabama, Florida) jurisdictional boundaries		
Project Description	Oil and gas leasing activities may occur on a given lease tract for 40 to 70 years and include geophysical (sonar) surveys, drilling of exploration, development and production wells; installation and operation of platforms and pipelines and support facilities; transport of hydrocarbons using pipelines or tankers to processing locations; and decommissioning. The number of active leases and wells fluctuates regularly. Of the over 1,400 active platforms, as of September 2023, 319 are caisson structures, 1,144 are fixed platforms, and 6 are well protector structures (Bureau of Safety and Environmental Enforcement, 2023a). As of August 1, 2023, there were 2,193 active oil and gas leases over 11,748,568 acres in the Gulf of Mexico Outer Continental Shelf Region (Western Area-Texas: 387 leases over 2,124,673 acres; Central Area-Alabama, Louisiana: 1,793 leases over 9,549,015 acres; and Eastern Area-Florida: 13 leases over 74,880 acres) (Bureau of Ocean Energy Management, 2023b). From 2018 through August 2023, 672 new permits for wells were approved (Bureau of Safety and Environmental Enforcement, 2023b). The National Outer Continental Shelf Program development process initially included Outer Continental Shelf lease sales beginning in late 2019, as published in the 2019-2024 National Outer Continental Shelf Oil and Gas Leasing Draft Proposed Program on January 4, 2018. However, the Secretary of the Interior adjusted the timing of the first sale. As a result, the program name has been changed from the 2019–2024 National Program to the 2023–2028 Program. The Draft 5-Year Program schedules an additional 10 potential lease sales in all three Gulf of Mexico Planning Areas from 2023 through 2028 (Bureau of Ocean Energy Management, 2022). Exploratory activities are possible on the approximately 2,500 active leases in the Gulf of Mexico (Bureau of Ocean Energy Management, 2022). Existing activities would continue in the Pacific and Atlantic Outer Continental Shelf. A separate Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, issued in January 2021, paused all offshore and onshore oil and gas leasing pending comprehensive review of the leasing and permitting program; implementation of the pause was intermittent due to multiple legal challenges and lease sales have continued to date (Harvard Law Review, 2023). The majority of oil and gas structures and the pipelines linking those structures with onshore processing and refining facilities are located off of Louisiana and do not overlap with Navy testing ranges and OPAREAs.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	Project specific mitigations are required for each project, as applicable.		

Notes: NM = nautical miles; OPAREA = operating area; RFFA = reasonably foreseeable future action

Table J.1-9: Floating Systems

RFFA	*Floating Systems*		
Location	Gulf of Mexico Outer Continental Shelf, Western and Central Planning Areas Deep water (greater than 650 ft.)		
Project Description	Floating oil and gas production systems occur in deep-water environments, storing crude oil in tanks in the hulls of vessels and periodically offloading the crude oil to shuttle tankers or ocean-going barges for transport to shore (66 *Federal Register* 67542). At this time, two systems occur in the Walker Ridge area of the Gulf of Mexico: (1) Petrobras America, Inc., located 165 miles from Louisiana in approximately 2,500 m of water, produces oil and gas (gas is transported to shore by pipeline) (Bureau of Ocean Energy Management & Regulation and Enforcement, 2011) and (2) Royal Dutch Shell, located 200 miles southwest of New Orleans in 2,900 m of water (The Times-Picayune, 2015).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Production, Storage, and Offloading systems have similar mitigation measures as those expected for other oil development and production systems. Further site-specific, technical, and environmental evaluation is required for specific Floating, Production, Storage, and Offloading proposals. No Floating, Production, Storage, and Offloading systems permitted within 100 km of the Breton National Wildlife Refuge Class 1 Air Quality area; emission restrictions; security and safety controls for spill prevention and damage minimization.		

Notes: ft. = feet; km = kilometers; m = meters; RFFA = reasonably foreseeable future action

Table J.1-10: Liquefied Natural Gas Terminals

RFFA	*Liquefied Natural Gas Terminals*		
Location	Atlantic Ocean and Gulf of Mexico, coast and nearshore		
Project Description	Liquefied Natural Gas terminals function to regasify liquid natural gas for distribution via pipeline networks. The following Liquefied Natural Gas terminals are within the Study Area: • Nine Existing Import: six Gulf of Mexico, three Atlantic (Federal Energy Regulatory Commission, 2023b) • Seven Existing Export: five Gulf of Mexico, two Atlantic (Federal Energy Regulatory Commission, 2023a) • Six Approved and under Construction Export: Gulf of Mexico (Federal Energy Regulatory Commission, 2023a) • Eleven Approved Not Yet under Construction Export: Gulf of Mexico (Federal Energy Regulatory Commission, 2023a) • Six Proposed Export: Gulf of Mexico (Federal Energy Regulatory Commission, 2023a) • Three Projects in Pre-Filing Export: Gulf of Mexico (Federal Energy Regulatory Commission, 2023a) In January 2024, the *Federal Register* released a proposed rule (40 CFR Parts 2 and 99) that paused the approval of new licenses to export U.S. liquefied natural gas. New exports are vetted on a case-by-case basis to see whether they are in the public interest, but government assumptions used in those reviews haven't been updated since 2018. Pending further executive review.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	Liquid natural gas terminals have similar mitigation measures as those expected for other oil development and production systems.		

Notes: CFR = Code of Federal Regulations; RFFA = reasonably foreseeable future action; U.S. = United States

Table J.1-11: Oil and Gas Structure Removal Operations

RFFA	***Oil and Gas Structure Removal Operations***		
Location	Gulf of Mexico Outer Continental Shelf, all water depths		
Project Description	Decommissioning seafloor obstructions (wellheads, caissons, casing strings, platforms, and mooring devices) includes the explosive and non-explosive severing of structures and subsequent salvage and site-clearance operations (Minerals Management Service, 2005). Decommissioning operations generally occur after lease expiration, when the well or facility is no longer deemed economically viable, or when the physical condition of the structure becomes unsafe or a navigation hindrance. Roughly 189 oil and gas structures are removed annually in the Gulf of Mexico (U.S. Government Accountability Office, 2015). Of these, about half are removed using explosives, which are detonated inside pilings and well conductors at a depth of 15 ft. below the seafloor (National Marine Fisheries Service, 2021b).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C	C	X
Summary of Impact Minimization and Mitigation Measures	General blasting criteria and scenario-specific requirements such as avoidance of hard bottom habitats and anchor restrictions for support vessel and transport use; use of turtle exclusion devices and 30-minute limits for site-clearance trawling; and observation for marine mammals and turtles, pausing activities in response to sightings.		

Notes: ft. = feet; RFFA = reasonably foreseeable future action

Table J.1-12: Wind Energy Development

RFFA	*Wind Energy Development*		
Location	Atlantic Ocean Outer Continental Shelf federal waters (approximately 200 to 350 NM seaward from state jurisdictional boundary) Atlantic Ocean state waters (0 to 3 NM from shoreline of Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, Rhode Island, Maine, New York, and Massachusetts) Gulf of Mexico state waters (0 to 9 NM from shoreline of Florida and Texas)		
Project Description	Commercial-scale offshore wind facilities are similar to onshore wind facilities, and, depending on rotor size and spacing requirements, can include from 14 (110 m rotor diameter) to 40 (150 m rotor diameter) turbines in one Outer Continental Shelf block (3 statute miles by 3 statute miles) (Bureau of Ocean Energy Management, 2013). Average leaseholds are 8 blocks and current technology limits development to waters no deeper than 100 m. Development includes installing the substructure, which is typically a large steel tube (up to 20 ft. diameter) driven 80 to 100 ft. below the mudline in 15 to 100 ft. water depths, with the pole and turbine mounted on top (Minerals Management Service, 2007). Each turbine is connected by power cable to an electric service platform/substation, typically located somewhere within the turbine array, from which buried high-voltage cables transmit the power to an onshore substation for integration into the onshore grid. Five wind turbines are established and active at Block Island, Rhode Island. Twenty-nine commercial wind energy leases have been issued in federal waters on the Outer Continental Shelf, including those offshore Delaware, Massachusetts, Maryland, New Jersey, Rhode Island, Virginia, New York, and North Carolina (Bureau of Ocean Energy Management, 2023d). Various state offshore wind energy programs are also under development. Two offshore wind projects, Park City Wind and Commonwealth Wind, advanced in February of 2024; they would be located more than 20 miles off the coast of Massachusetts (Richards, 2024). NMFS has issued or is in the process of issuing multiple Incidental Harassment Authorizations for the take of marine mammal's incidental to marine site characterization surveys associated with planning for expanded offshore wind energy development in the Outer Continental Shelf. Specifically, Sunrise Wind has requested marine mammal take authorization that would be incidental to construction of offshore wind projects off the coast of New York from 2023 to 2028. Revolution Wind has requested a similar Incidental Harassment Authorization for 2023 to 2028 within the Rhode Island and Massachusetts wind energy area (National Oceanic and Atmospheric Administration, 2023b). Additionally, a new array has been proposed off the coast of Virginia that would connect onshore via an infrastructure corridor (Kitty Hawk Wind, 2022b) from lease block OCS-A 0508 through R-6606 of the VACAPES Range Complex. The construction and operations plan for the project concludes that long-term displacement of national security maritime uses due to the presence of new fixed structures within the Wind Development Area, short-term disturbance of military aviation activities due to the presence and transfer of operations and maintenance vessels and personnel, occasional disturbance of national security maritime uses due to the presence of operations and maintenance project vessels and helicopters within the Wind Development Area, and occasional diversion of national security maritime vessel traffic due to intermittent inspection, repair, or replacement of export cables or inter-array cables could result from operation of the wind array (Kitty Hawk Wind, 2022a). Additional offshore windfarm projects are expected in the coming years for both research and commercial development in state and federal waters.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	Implementation of proper siting and mandatory design criteria; sonic pingers and/or turtle exclusion devices to minimize entanglement and entrainment potential; adherence to U.S. Coast Guard oil spill response plans; use of environmentally friendly chemicals.		

Notes: ft. = feet; m = meter; NM = nautical miles; NMFS = National Marine Fisheries Service; RFFA = reasonably foreseeable future action; U.S. = United States; VACAPES = Virginia Capes

Table J.1-13: Marine Hydrokinetic Power Generation

RFFA	*Marine Hydrokinetic Power Generation*		
Location	Atlantic and Gulf Coasts, especially coastal Maine		
Project Description	Hydrokinetic power is a type of hydropower that is derived from fast-moving marine or estuarine currents driven by waves, tides, or offshore ocean currents (U.S. Department of Energy, 2015b). There are no existing licensed hydrokinetic projects on the Atlantic coast. There was one hydrokinetic preliminary permit for the Bourne Tidal Test Site project located in the Cape Cod Canal in Massachusetts state waters; the preliminary permit expired March 1, 2023. Commercial developers are also testing scale models of Navy wave energy technology in the wave-making facility at the Naval Surface Warfare Center Carderock in Maryland (U.S. Department of Energy, 2015a). Research activities may include sea trials, small-scale prototype testing, and research that may use instruments such as Doppler profile current sensors, digital recording sonar, and underwater video and still photography taken from unmanned underwater vehicles. There are three approved research and development projects planned in the Gulf of Mexico, Florida Straits, and North Carolina (U.S. Department of Energy, 2023).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
			C/O
Summary of Impact Minimization and Mitigation Measures	No industry-standard impact minimization measures yet developed as technologies are still being engineered.		

Note: RFFA = reasonably foreseeable future action

J.1.3 Other Commercial Industries

Table J.1-14: Undersea Communication Cables

RFFA	*Undersea Communication Cables*		
Location	Oceans worldwide		
Project Description	Over 550,000 miles of cables currently exist in the world's oceans.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	Vessels are restricted from anchoring near undersea cables.		

Note: RFFA = reasonably foreseeable future action

Table J.1-15: Marine Mineral Extraction

RFFA	***Marine Mineral Extraction***		
Location	U.S. Outer Continental Shelf and shoreline, including Florida, Louisiana, Mississippi, New Jersey, North Carolina, South Carolina, Maryland, and Virginia		
Project Description	Extraction of minerals involves primarily hard minerals (e.g., sand and gravel), although heavy minerals (e.g., titanium and zircon) are also potential offshore resources. Since 1995, 66 leases have been executed to extract minerals; there are currently 6 active leases and 3 proposed leases in 7 states (Florida, Louisiana, Maryland, Mississippi, North Carolina, New Jersey, and Virginia) (Bureau of Ocean Energy Management, 2023c).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	Dredge timing and location constraints; lighting protocols; specialized equipment requirements; monitoring; buffer establishment surrounding cultural resources and hard bottom habitat (Bureau of Ocean Energy Management, 2017). Sand and gravel are dredged from leased marine areas and applied to coastal restoration projects, including beach nourishment and coastal habitat restoration (Bureau of Ocean Energy Management, 2016).		

Notes: RFFA = reasonably foreseeable future action; U.S. = United States

Table J.1-16: Commercial Fishing

RFFA	***Commercial Fishing***		
Location	Greater Atlantic region (Maine through Cape Hatteras, North Carolina) Southeast region (North Carolina to Texas)		
Project Description	There are more than 50 different fisheries in the Greater Atlantic region (National Oceanic and Atmospheric Administration, 2019). In the Southeast region, there are 21 separate fisheries. The National Oceanic and Atmospheric Administration provides bycatch data for 50% of the Greater Atlantic fisheries and 48% of those that occur in the Southeast. In the 2018 Final EIS/OEIS, Figure 3.11-5 illustrates the decline of total fish caught in the Atlantic since 1956, and Figure 3.11-6 shows a similar decline in the Gulf of Mexico. NMFS issues fishing vessel, dealer, and commercial operator permits and fishing authorizations as required under the various Federal Fishery Regulations.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Various bycatch mitigation technologies, quotas, and seasonal restrictions required per the fishery-specific permit process.		

Notes: % = percent; EIS = Environmental Impact Statement; NMFS = National Marine Fisheries Service; OEIS = Overseas Environmental Impact Statement RFFA = reasonably foreseeable future action

Table J.1-17: Recreational Fishing

RFFA	***Recreational Fishing***		
Location	Greater Atlantic region (Maine through Cape Hatteras, North Carolina) Southeast Region (North Carolina to Texas)		
Project Description	In 2019, marine recreational fisherman made 187 million trips and caught 950 million fish, 64% of which were released. Twenty-seven percent of trips and 35% of catch occur within the Gulf Coast. Approximately 9% of the recreational fishing catch comes from federal waters, 54% from estuaries, and 36% from state terrestrial seas (National Marine Fisheries Service, 2021a). Approximately 10% of the recreational fishing catch is from federal waters, and of this, most occurs in estuarine areas.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Recreational saltwater fisheries in waters from 3 to 200 nautical miles from shore in the Greater Atlantic Region are managed by NOAA. Regulations are in place for specific species. Anglers aged 16 or older need a permit to fish in federal waters.		

Notes: % = percent; NOAA = National Oceanic and Atmospheric Administration; RFFA = reasonably foreseeable future action

Table J.1-18: Aquaculture

RFFA	***Aquaculture***		
Location	State waters bordering the Atlantic Ocean and Gulf of Mexico		
Project Description	Although saltwater farms are present throughout the Study Area, Florida and Massachusetts have the greatest number with 178 and 161, respectively (U.S. Department of Agriculture, 2019).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	C/O	C/O
Summary of Impact Minimization and Mitigation Measures	NOAA provides guidance for action agencies on how to request Section 7 consultation of the Endangered Species Act on aquaculture projects. This consultation determines that the project is Not Likely to Adversely Affect (NLAA) listed species and if critical habitat is present. Action agencies submit an informal consultation request to NOAA Fisheries for concurrence. NOAA Fisheries will provide a Letter of Concurrence to the action agency if it agrees with the action agency's NLAA determination.		

Notes: NOAA = National Oceanic and Atmospheric Administration; RFFA = reasonably foreseeable future action

Table J.1-19: Coastal Land Development and Tourism

RFFA	***Coastal Land Development and Tourism***		
Location	States bordering the Atlantic Ocean and Gulf of Mexico		
Project Description	Coastal land development adjacent to the Study Area is both intensive and extensive, including development of homes, businesses, recreation, vacation, and ship traffic at port facilities and marinas. The Study Area coastline also includes extensive coastal tourism (hotels, resorts, restaurants, food industry, and vacation homes) and its supporting infrastructure (retail businesses, marinas, fishing tackle stores, dive shops, fishing piers, recreational boating harbors, beaches, and recreational fishing and whale watching). New development in the coastal zone requires a permit from the state or local government per the Coastal Zone Management Act (Chapter 6, Regulatory Considerations).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C	C	C
Summary of Impact Minimization and Mitigation Measures	Site-specific mitigation often determined during Coastal Consistency Review by the respective state's Coastal Zone Management Program.		

Note: RFFA = reasonably foreseeable future action

Table J.1-20: Maritime Traffic

RFFA	*Maritime Traffic*		
Location	U.S. East Coast (Figure 3.11-4 in the 2018 Final EIS/OEIS) Panama Canal Atlantic Coast Port Access		
Project Description	**U.S. East Coast:** The East Coast of the United States is heavily traveled by commercial, recreational, and government marine vessels with several commercial ports near Navy OPAREAs (see Figure 3.11-4 in the 2018 Final EIS/OEIS for commercially used waterways in the Study Area). The number of active ports (as listed in the Marine Mineral Leases) in the Atlantic Region Study Area increased, ship traffic increased, and ships are larger. In 2015, there were over 23,000 port calls at Atlantic ports (including Puerto Rico and the U.S. Virgin Islands) and over 34,000 at Gulf of Mexico ports (U.S. Maritime Administration, 2015). In Norfolk, the Virginia International Gateway Expansion project was completed in 2019, which doubled port capacity, with additional capacity opening at Craney Island in 2025. **Panama Canal:** The Everglades Port has plans to purchase five post-Panamax cranes between 2019 and 2034, and in Gulfport an expansion project at the container terminal was completed in 2018 (Notteboom et al., 2022). **Atlantic Coast Port Access:** In 2019, the U.S. Coast Guard announced a new study to supplement and build on the ongoing effort by conducting a series of port access route studies along the Atlantic Coast (National Oceanic and Atmospheric Administration, 2023a). The Coast Guard Office of Standards Evaluation and Development is preparing a new PEIS for its rulemaking that will establish and/or codify existing vessel traffic fairways and associated routing schemes in waters that fall under U.S. jurisdiction, specifically the Atlantic Coast Fairway.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	C/O	O	O
Summary of Impact Minimization and Mitigation Measures	Decreasing vessel speed limits in some areas and implementing Traffic Separation Schemes to avoid passage through areas of high whale densities.		

Notes: EIS = Environmental Impact Statement; OEIS = Overseas Environmental Impact Statement; OPAREA = operating area; PEIS = Programmatic Environmental Impact Statement; RFFA = reasonably foreseeable future action; U.S. = United States

J.1.4 RESEARCH

Table J.1-21: Geological and Geophysical Oil and Gas Survey Activities

RFFA	*Geological and Geophysical Oil and Gas Survey Activities*		
Location	Atlantic Ocean Outer Continental Shelf, Delaware Bay to south of Cape Canaveral, Florida, seaward from state jurisdictional boundary to 403 miles offshore		
Project Description	Offshore geological and geophysical activities includes seismic air gun surveys and high-resolution geophysical surveys supporting oil and gas, renewable energy, and marine minerals exploration (Bureau of Ocean Energy Management, 2014). Seismic surveys are accomplished by towing a sound source such as an air gun array that emits acoustic energy in timed intervals behind a research vessel. Seismic pulses are typically emitted at intervals of 5 to 60 seconds and source levels are 230.7 dB re 1 µPa for the large air gun array and 210.3 dB re 1 µPa for the small array (Bureau of Ocean Energy Management, 2014). Seismic air surveys are loud enough to penetrate hundreds of kilometers into the ocean floor, even after going through thousands of meters of ocean (Weilgart, 2013). The Bureau of Ocean Energy Management is reviewing one application from a single permittee for Atlantic Outer Continental Shelf seismic survey activities, the application area covers waters from Delaware to Florida (Bureau of Ocean Energy Management, 2023a).		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	Establishing and monitoring (visual, passive acoustic, and active acoustic) safety and acoustic exclusion zones and enforcing delay/suspension and spacing protocols. Seasonal management includes avoidance of North Atlantic right whale and sea turtle breeding season and critical habitat. Maximum sound level thresholds have been established and are enforced. All seismic surveys conducted by U.S. vessels are subject to required mitigation measures, the MMPA authorization process administered by NMFS, as well as the NEPA process associated with issuing MMPA authorizations.		

Notes: dB re 1 µPa = dB referenced to a pressure of 1 microPascal; MMPA = Marine Mammals Protection Act; NEPA = National Environmental Protection Agency; NMFS = National Marine Fisheries Service; RFFA = reasonably foreseeable future action; U.S. = United States

Table J.1-22: Academic Research

RFFA	*Academic Research*		
Location	Throughout the Study Area		
Project Description	Wide-scale academic research is conducted in the Study Area by federal entities, such as the Navy and the National Oceanic and Atmospheric Association/NMFS, as well as state and private entities and other partnerships. Academic geologists use seismic surveys/air gun arrays to study the ocean floor and beyond, including plate tectonics and volcanic activity.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	NMFS and states manage scientific research permits for certain activities.		

Notes: NMFS = National Marine Fisheries Service; RFFA = reasonably foreseeable future action

Table J.1-23: Field Operations at National Marine Sanctuaries and Marine National Monuments

RFFA	*Field Operations at National Marine Sanctuaries and Marine National Monuments*		
Location	Sanctuaries located in the Northeast/Great Lakes and Southeast/Gulf of Mexico		
Project Description	The Programmatic Environmental Assessment of Field Operations in the Southeast and Gulf of Mexico National Marine Sanctuaries (National Oceanic and Atmospheric Administration, 2018b) and the Programmatic Environmental Assessment of Field Operations in the Northeast and Great Lakes National Marine Sanctuaries (National Oceanic and Atmospheric Administration, 2018a) analyze the options of maintaining the status quo and existing level of operations in national marine sanctuaries and monuments for the next 5 years, or increasing the number of small boat operations and stopping the requirement for small boat best management practices in some locations.		
Project Timeframe	Past	Present	Future
	C = Construction, O = Operation, X = Other		
	O	O	O
Summary of Impact Minimization and Mitigation Measures	These management practices may include existing actions such as vessel speed restrictions, night operation prohibitions, on-board marine species observers (unless specified as required or recommended mitigation measures), restriction of navigation to within marked channels, and safe distance requirements from whales.		

Note: RFFA = reasonably foreseeable future action

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