Supplemental Table S1. Objectives, research questions, and/or hypotheses stated by each wind project monitoring plan.

Wind Project Name	Study #	Stated Objective, Research Question, and/or Hypothesis
Atlantic Shores Offshore Wind - South	1	Question (Q)1 - Does the diversity of the fish community change because of project effects? If so, by how much?; H01 - The diversity of the demersal fish community before and after effects does not depend on the strata (i.e., distance from impacts).; H02 - The combined catch per unit effort (CPUE) of dominant demersal fish species before and after effects does not depend on the strata (i.e., distance from effects).; H03 - The lengths/weights of dominant demersal fish species before and after effects does not depend on the strata (i.e., distance from effects).; Q2 - Does the density (i.e., combined CPUE) of fishes change because of project effects? If so, by how much?; Q3 - Do the length/weight distributions of fishes change because of project effects? If so, by how much?; Q4 - Does the diet of selected fishes change because of project effects? If so, how?
	2	Q1 - Does the density (i.e., CPUE) of structure-associated species change because of project effects? If so, by how much?; H01 - The CPUE of structure-associated “fishes” before and after effects does not depend on the distance from effects (i.e., WTGs).; H02 - The lengths/weights of structure-associated “fishes” before and after effects does not depend on the distance from effects.; H03 - The diversity of structure-associated “fishes” before and after effects does not depend on the distance from effects.; Q2 - Do the length/weight distributions of local structure associated species change because of project effects? If so, by how much?; Q3 - Does the diversity of structure-associated species change because of project effects? If so, by how much?
	3	Q1 - Do the densities (i.e., CPUE) of Atlantic surf clams and ocean quahogs change because of project effects? If so, by how much?; Q2 - Do the sizes and sizes-at-age of Atlantic surf clams and ocean quahogs change because of project effects? If so, by how much?; Q3 - Does the distribution of Atlantic surf clams and ocean quahogs change because of project effects? If so, how?; H01A - The CPUE of Atlantic surf clams before and after effects does not depend on the distance from effects. H01B - The CPUE of ocean quahogs before and after effects does not depend on the distance from effects.; H02A - The lengths/weights/size-at-age of Atlantic surf clams before and after effects does not depend on the distance from effects.; H02B - The lengths/weights/size-at-age of ocean quahogs before and after effects does not depend on the distance from effects.
	4	1) Does the benthic macroinvertebrate community change before and after construction? If so, how?; 2) Does the benthic habitat change before and after construction? If so, how?; H01 - The diversity of benthic macroinvertebrates before and after construction does not depend on the distance from effects (i.e., WTGs or export cables).; H02 - The benthic habitat before and after construction does not depend on the distance from effects (i.e., WTGs or export cables).

	5	1) Does megafauna species occurrence change from pre- to post- construction around WTG foundations and export cable installations? If so, how? 2) Do the benthic megafauna communities change from pre- to post- construction around WTG foundations and export cable installations? If so, how? 3) Does benthic community composition and distribution change on WTG foundations and scour protection during the survey? If so, how?
	6	Objective (Obj.) - Pre- and post-construction video and digital bathymetric maps will be analyzed and compared to describe any potential changes in seabed morphology within the monitoring sites.
Empire Wind	7	H0 - Changes in relative biomass in both the reference and impact areas will be statistically indistinguishable between time periods (before and after).; H1-Changes in relative biomass will not be the same at the reference and impact areas between time periods (before and after; two-tailed).
	8	H0 - Fish metrics will not change over time and will remain consistent with respect to the distance from a turbine.; H1-Fish metrics will change over time and will not be consistent with respect to distance from the turbine.
	9	H0 - Fish community composition will not differ before, during, or after construction of the Empire Wind Project; H1- Fish community composition will differ before, during, or after construction of the Empire Wind Project.
	10	H0 - Species presence, persistence, and movements will not change between time periods (before and after).; H1- Species presence, persistence, and movements will change between time periods (before and after).
	11	H0 - Changes in scallop densities and scallop spatial distributions in both the reference and impact areas will be statistically indistinguishable between time periods (before and after).; H1-Changes in scallop densities and scallop spatial distributions will not be the same at the reference and impact areas between time periods (before and after; two-tailed).
	12	Introduction of novel surfaces (foundations, scour protection, and cable protection layers) will develop epifauna that vary with depth and change over time. [Hard Bottom-Novel Surfaces]
	13	The artificial reef effect (epifaunal colonization) associated with the offshore wind structures will lead to enrichment (fining and higher organic content) of surrounding soft bottom habitats resulting in shifts in benthic function (increased organic matter processing). [Structure-associated – Organic Enrichment]
	14	Physical disturbance of soft sediments during cable installation will temporarily disrupt the function of the infaunal community, community function is expected to return to pre-disturbance conditions. [Cable-associated – Physical Disturbance]
New England Wind	15	H0 - Changes in relative abundance (CPUE) between time periods (before and after) will not be statistically significant between the Control and Development areas.; H1: Changes in CPUE between time periods (before and after) will be statistically different between the Control and Development areas.
	16	H0 - Changes in relative abundance (density) between time periods (before and after) will not be statistically significant between the control and development areas.; H1 - Changes in density between time periods (before and after) will be statistically significant between the control and development areas

	17	H0 - Changes in relative abundance (CPUE) between time periods (before and after) will not be statistically significant between the control and development areas.; H1 - Changes in CPUE between time periods (before and after) will be statistically significant between the control and development areas.
	18	H0 - Changes in relative abundance (CPUE) between time periods (before and after) will not be statistically significant between the Control and Development areas.; H1 - Changes in CPUE between time periods (before and after) will be statistically significant between the Control and Development areas.
	19	H01 - There will be no difference in benthic community metrics (e.g., abundance, diversity, or other indicator) before and after construction; H02 - There will be no difference in benthic community metrics between impact and control monitoring areas; and H03 - There will be no difference in benthic community metrics along a gradient of distance from potential impact source.
	20	H01 - There will be no difference in benthic community metrics (e.g., abundance, diversity, or other indicator) before and after construction; H02 - There will be no difference in benthic community metrics between impact and control monitoring areas; and H03 - There will be no difference in benthic community metrics along a gradient of distance from potential impact source.
	21	H01 - There will be no difference in benthic community metrics (e.g., abundance, diversity, or other indicator) before and after construction; H02 - There will be no difference in benthic community metrics between impact and control monitoring areas; and H03 - There will be no difference in benthic community metrics along a gradient of distance from potential impact source.
Ocean Wind 1	22	H0 - Changes in relative abundance in both the reference and impact areas will be statistically indistinguishable between time periods (before and after).; H1 - The alternative hypothesis is that changes in CPUE will not be the same at the reference and impact areas between time periods (before and after; two-tailed).
	23	H0 - Fish community composition will not differ before, during or after construction of the Ocean Wind Project; H1 - Fish community composition will differ before, during or after construction of the Ocean Wind Project
	24	H0 - Changes in relative abundance in both control site and the OCW lease area will be statistically indistinguishable between time periods (before and after).; H1 - The alternative hypothesis is that changes in CPUE will not be the same at the control site and the OCW lease area between time periods (before and after; two-tailed).
	25	H0 - Changes in relative abundance in both control site and the OCW lease area will be statistically indistinguishable between time periods (before and after).; H1 - The alternative hypothesis is that changes in CPUE will not be the same at the control site and the OCW lease area between time periods (before and after; two-tailed).
	26	H0 - Changes in relative abundance in both control site and the OCW lease area will be statistically indistinguishable between time periods (before and after).; H1 - The alternative hypothesis is that changes in CPUE will not be the same at the control site and the OCW lease area between time periods (before and after; two-tailed).

27 H0 - Changes in relative abundance of surfclams in both the reference and impact areas will be statistically indistinguishable between time periods (before and after).; H1 - The alternative hypothesis is that changes in clam relative abundance will not be the same at the reference and impact areas between time periods (before and after; two-tailed); H0 – There is no difference in the age structure of surfclams between areas (control and impact).; H1 – The age structure of surfclams differs between areas (control and impact; two-tailed).

28 What is the abundance, distribution, species assemblage and size structure of pelagic fish that are not well sampled by trawls, and how does the pelagic fish community vary across time and space as it relates to the construction and operation of the OCW Project?

29 What is the abundance, distribution, species assemblage and size structure of pelagic fish that are not well sampled by trawls, and how does the pelagic fish community vary across time and space as it relates to the construction and operation of the OCW Project?

30 1) What is the area of core activity of individual target fishes in the study area before, during, and after construction?; 2) Do individual fishes of target species (summer flounder, smooth dogfish, and horseshoe crabs) change habitat connectivity (e.g. estuarine-shelf or along-shelf migration) in response to cable routing?

31 Introduction of novel surfaces (foundations, scour protection, and cable protection layers) will develop epifauna that vary with depth and change over time. [Hard Bottom – Novel Surfaces]

32 The artificial reef effect (epifaunal colonization) associated with the offshore wind structures will lead to enrichment (fining and higher organic content) of surrounding soft bottom habitats resulting in shifts in benthic function (increased organic matter processing). [Soft Bottom – Structure-associated]

33 Physical disturbance of soft sediments from cable installation (including seafloor preparation) will temporarily disrupt function of the infaunal community, community function is expected to return to pre-disturbance conditions. [Soft Bottom – Cable-associated]

34 Topographic sand ridge features in the northeast portion of the Wind Farm Area, are hypothesized to influence the sediment type and benthic function (i.e., variation based on depth; crest versus trough); this relationship between topography of sand ridge features, sediment type, and benthic function will persist following WTG and inter-array cable (IAC) construction and operations. [Soft Bottom -- Sand Ridges]

35 Cable installation activities may result in decrease in SAV shoot density along the fringes of the prior channel but is expected to return to pre-disturbance conditions. [Submerged Aquatic Vegetation – Cable-associated]

Revolution Wind	36	H0 - Changes in relative abundance (catch per unit effort [CPUE]) between time periods (before and after) will be statistically indistinguishable between the reference and RWF Project areas.; H1 - Changes in CPUE between time periods (before and after) will be statistically different between the reference and RWF Project areas; H0 - Changes in species composition between time periods (before and after) will be statistically indistinguishable between the reference and RWF Project areas. H1 - Changes in species composition between time periods (before and after) will be statistically different between the reference and RWF Project areas.; H0 - Changes in prey composition between time periods (before and after) will be statistically indistinguishable between the reference and RWF Project areas. H1 - Changes in prey composition between time periods (before and after) will be statistically different between the reference and RWF Project areas.
	37	H0 - Changes in relative abundance in both the reference and RWF ventless trap survey impact areas will be statistically indistinguishable between time periods (before and after).; H1 - Changes in CPUE will not be the same at the reference and RWF ventless trap survey impact areas between time periods (before and after; two-tailed).; H0 - Changes in demographic parameters (e.g., shell disease) in both the reference and RWF ventless trap survey impact areas will be statistically indistinguishable between time periods (before and after). H1 - Changes in demographic parameters (e.g., shell disease) will not be the same at the reference and RWF ventless trap survey impact areas between time periods (before and after).
	38	Obj. 1) Evaluate changes in highly migratory species (HMS) presence, residency, and movements between pre-construction, construction, and post-construction.; Obj. 2) Evaluate HMS connectivity among Ørsted lease sites.; Obj. 3) Monitor tagged HMS at spatial scales greater than the Ørsted project areas; H0: HMS presence and movements are driven by environmental features (e.g., water temperature, prey distribution) and animal biology or physiology and are not affected by construction or operation of offshore wind turbines or the presence and activity of electrical transmission cables.
	39	The focus of the proposed cable survey is to assess potential changes in abundance of lobster and other target species. Both EMF and physical disturbance are discussed in this section implying that these are the IPFs the study is evaluating.
	40	Epifaunal community will vary with water depth (zonation with light and tide); successional development over time
	41	Relocating boulders will alter the physical characteritics of that hard bottom (increase rugosity, complexity, boulder density); potential for rapid recolonization of epifauna on relocated boulders
	42	WTG epifaunal growth will result in sediment fining and higher organic content in surrounding soft bottom, this will support deposit feeding benthic inverts. Effects will decrease with increaing distance from WTG.
	43	After iniital physical disturbance during construction, soft sediment community function expected to return to pre-conditions
South Fork Wind	44	H0 - changes in CPUE (relative abundance) for monkfish and winter skate in both the Reference and Impact Areas will be statistically indistinguishable over time. H1 - changes in CPUE will not be the same at the Reference and Impact Areas over time (two-tailed).; H0 changes in diet between the Impact and Reference Areas are statistically indistinguishable over time

	45	H0 - Changes in CPUE (relative abundance) for the dominant species in both the Impact and Reference Areas will be statistically indistinguishable over time. H1 - Changes in CPUE will not be the same at the Impact and Reference Areas over time (two-tailed).
	46	H0 - changes in relative abundance in both the Project and Reference Areas will be statistically indistinguishable over time for lobster, Jonah crabs, and rock crabs. H1 - is that changes in CPUE will not be the same at the Impact and Reference Areas over time (two-tailed).; H0: changes in demographic parameters (e.g., shell disease) for lobsters and crabs in both the Reference and Impact Areas will be statistically indistinguishable over time. H1: changes in demographic parameters will not be the same at the Reference and Impact Areas over time (two-tailed).
	47	H0 - relative abundance will remain the same over time and remain consistent with respect to the distance from a turbine
	48	Obj. 1 - To support ongoing monitoring of the seasonal distribution and spawning activity of Atlantic cod on and around Cox Ledge, including within the SFWF work area; Obj. 2 - To support ongoing monitoring of the presence and persistence of Highly Migratory Species (HMS) at popular recreational fishing grounds in the southern New England WEAs
	49	Obj. - Measure changes over time in the benthic habitat and physical structure of sediments at varying spatial scales relative to turbine foundations.
	50	Obj. - Examine the effects of installation and operation of an export cable on the benthic habitat using a BAG design
	51	Obj. - Measure changes over time in the nature and extent of macrobiotic cover of hard bottom
	52	Obj. - Measure changes over time in the nature and extent of macrobiotic cover of hard bottom
Sunrise Wind	53	H0 - Changes in relative abundance (CPUE) between time periods (before and after) will be statistically indistinguishable between the reference and SRWF areas.; H1 - Changes in CPUE between time periods (before and after) will be statistically different between the reference and SRWF areas. ; H0 - Changes in species composition between time periods (before and after) will be statistically indistinguishable between the reference and SRWF areas.; H1 - Changes in species composition between time periods (before and after) will be statistically different between the reference and SRWF areas; H0 - Changes in prey composition between time periods (before and after) will be statistically indistinguishable between the reference and SRWF areas. H1 - Changes in prey composition between time periods (before and after) will be statistically different between the reference and SRWF areas.
	54	1) Evaluate changes in HMS presence, residency, and movements between pre-construction, construction, and operation (H0: HMS presence and movements are driven by environmental features (e.g., water temperature, prey distribution) and animal biology or physiology and are not affected by construction or operation of offshore wind projects. H1: HMS presence and movements are affected by construction or operation of offshore wind projects.); 2) Evaluate HMS connectivity among Orsted/Eversource lease sites. (H0: HMS presence and movements are driven by environmental features (e.g., water temperature, prey distribution) and animal biology or physiology and are not affected by construction or operation of offshore wind projects. H1: HMS presence and movements are affected by construction or operation of offshore wind projects.) 3): Monitor tagged HMS at spatial scales greater than the Orsted/Eversource Project areas.

	55	H1a: Movements and behavior of teleost, elasmobranchs, horseshoe crab, and lobster species will not be impacted during wind farm operation by the EMF produced by the SRWEC.; Aa1: Rate of movement is different between the cable array and approach arrays.; Aa2: Residency is different between the cable array and approach arrays.; Aa3: Depth preference is different between the cable array and approach arrays.; Aa4: Acceleration is different between the cable array and approach arrays.; Aa5: Counts of unique detections are different between the cable array and the approach arrays.
	56	Epifaunal community will vary with depth (zonation with light and tide); successional development over time
	57	Successional colonization of epifaunal community over time is expected
	58	WTG epifaunal growth will result in sediment fining and higher organic content in surrounding soft bottom, this will support depositi feeding benthic inverts. Effects will decrease with increasing distance from WTG.
	59	After initial physical disturbance during construction, soft sediment community function expected to return to pre-conditions; effects will decrease with increasing distance from cable
Vineyard Wind	60	This project will develop a baseline of species and size composition before construction begins and provide: 1) abundance estimates for all commercially important species from for both the lease area and a control region; and 2) a comparison of the fish community between the two areas.
	61	Obj. 1 - Estimate the size and distribution of lobster populations in the development and control areas, Obj. 2 - Classify population dynamics of each species including, length, sex, reproductivity success, age, diet, and disease,
	62	Obj. 1 - Estimate the size and distribution of black sea bass populations in the development and control areas, Obj. 2 - Classify population dynamics of each species including, length, sex, reproductivity success, age, diet, and disease,
	63	Obj. 3 - Estimate the relative abundance and distribution of planktonic species such as larval lobster and fish in the neustonic layer of each area,.
	64	Obj. 4 - Obtain movement patterns and if possible meet the assumptions for a Jolly-Seber population estimate of lobsters through tagging.
	65	To provide: 1.) distribution and abundance estimates of dominant benthic megafauna, 2.) classification of substrate type across the survey domain, and 3.) comparison of benthic communities and substrate types between the development area, control area, and broader regions of the U.S. continental shelf. Further, this survey will 4.) classify substrate within aliquots sampled by the Massachusetts Lobsterman Association-SMAST trap survey of the area, if that project is funded.
Coastal Virginia Offshore Wind	66	Develop a sampling framework in support of acquiring 2 years of pre-construction data at the CVOW site with a focus on black sea bass.
	67	Establish a methodological basis for collecting relevant data to test hypotheses about the impact of the development upon affected fisheries and resources.

Supplemental Table S2. Project-level monitoring characteristics including where studies are to be conducted, research questions, and gear type. OSS=offshore substation; WTG=wind turbine generator; ROV=remotely operated vehicle; SPI/PV=sediment profile imaging/plan view; WEA=wind energy area.

Wind Project Name	Study #	Effects or IPFs evaluated	Survey Target(s)	Gear	Location
Atlantic Shores Offshore Wind - South	1	Presence of wind project structures	Demersal Fish	Demersal Otter Trawl	Between turbines; Control
	2	Presence of wind project structures	Structure-Oriented Fish	Trap (Unbaited ventless traps)	Transects fradiating from WTGs and OSSs
	3	Presence of wind project structures	Atlantic Surf Clam and Ocean Quahog	Hydraulic Dredge	Transects radiating from WTGs and OSSs
	4	Presence of wind project structures	Benthic Macroinvertebrate, Benthic Habitat	Grab (one of the following: e.g., van Veen, Day, Ponar)	Transects radiating from WTGs and cables
	5	Presence of wind project structures	Benthic Megafauna	Video Transects with towed camera or ROV	Transects radiating from WTGs and cables; on WTGs; on scour protection
	6	Presence of wind project structures	Sea bottom morphology	Multibeam Echosounder	"within monitoring sites"
Empire Wind	7	Presence of wind project structures	Longfin Squid and Bycatch Fish and Invertebrates	Otter Trawl	Between turbines; Control
	8	Presence of wind project structures	Structure-Oriented Fish	Baited Remote Underwater Video (BRUV)	Transects radiating from WTGs including scour protection
	9	Presence of wind project structures	Fish Community	eDNA	Transects radiating from WTGs including scour protection (coordinated with BRUV)

	10	Presence of wind project structures	Species TBD but likely similar species studied by Frisk et al. 2019 e.g., Atlantic sturgeon, winter flounder, summer flounder, black sea bass, striped bass, and elasmobranch spp.	Acoustic Telemetry	TBD; Uncertain
	11	Presence of wind project structures	Sea Scallop	Plan View Camera	Wind Project and Control
	12	Presence of wind project structures	Novel Hard Bottom	Stereo Camera Imaging	WTGs, OSSs, Foundations and Scour Protection; and cable protection
	13	Presence of wind project structures	Benthic Function -- Structure-Associated Organic Enrichment	SPI/PV; Sediment Sampling	Trasects radiating from WTGs including scour protection
	14	Physical disturbance of cable installation	Benthic Function -- Cable-Associated Physical Disturbance	SPI/PV	Trasects radiating from cable
New England Wind	15	Presence of wind project structures	Demersal Fish	Demersal Otter Trawl	Windfarm and 2 Controls
	16	Presence of wind project structures	Benthic Species such as flounders, red hake, crabs, lobster, sea scallops, and skates. In addition, the distribution of animal holes; Habiat	Drop Camera	Wind Project and 2 Controls
	17	Presence of wind project structures	Lobster, Crab, Black Sea Bass; Lobster Tagging	Ventless Trap plus Tagging	Wind Project and 2 Controls
	18	Presence of wind project structures	Larval Lobster and Other Planktonice Species	Neuston Net	Wind Project and 2 Controls
	19	Presence of wind project structures	Infauna; Grain Size	Grab (one of the following: e.g., van Veen, Day, Ponar)	Transects radiating out from Scour Protection or Cable
	20	Presence of wind project structures	Epibenthos; Grain Size	Video Transects	Transects radiating out from Scour Protection or Cable; Coordinated with grabs

	21	Presence of wind project structures	Seafloor Morphology and Structure	Multibeam Echosounder	"within the designated monitoring and control areas"
Ocean Wind 1	22	Presence of wind project structures	Demersal Fish and Invertebrates	Otter Trawl	Wind Project and 2 Controls
	23	Presence of wind project structures	Fish Community; Relative Abundance	eDNA	Wind Project and 2 Controls
	24	Presence of wind project structures	Structure Associated Species	Multi-method: Baited Remote Underwater Video (BRUVs))	Wind Project and Control
	25	Presence of wind project structures	Structure Associated Species	Multi-method: Chevron Traps	Wind Project and Control
	26	Presence of wind project structures	Structure Associated Species	Multi-method: Rod and Reel; Deployment of traditional floy tags for mark-recapture	Wind Project and Control
	27	Presence of wind project structures	Clam	Clam Dredge (Modified dredge for research and survey purposes)	Wind Project and Control
	28	Presence of wind project structures	Pelagic Fish	Autonomous gliders with echosounders	Wind Project and Adjacent Areas
	29	Presence of wind project structures	Pelagic Fish	Mobile BRUVs and	Wind Project and Adjacent Areas
	30	Presence of wind project structures	Summer Flounder, Black Sea Bass, Smooth Dogfish, Horseshoe Crabs, and Clearnose Skate.	Acoustic Telemetry: mobile and fixed receivers	Wind Project Only
	31	Presence of wind project structures	Novel Hard Bottom Monitoring	ROV/Video	Wind Project Only
	32	Presence of wind project structures	Benthic Function -- Soft Sediments - Structure Associated Organic Enrichment	SPI/PV	Wind Project Only
	33	Physical disturbance of cable installation	Benthic Function -- Soft Sediments - Cable Associated Physical Disturbance	SPI/PV	Wind Project Only

	34	Presence of wind project structures	Benthic Function -- Soft Sediments - Sand Ridges	SPI/PV	Wind Project and Control
	35	Physical disturbance of cable installation	Soft Sediments - SAV	Drop Camera	Wind Project Only
Revolution Wind	36	Presence of wind project structures	Demersal Fish and Invertebrates	Otter Trawl	Wind Project and Control
	37	Presence of wind project structures	Lobster and Crab	Ventless Trap - windfarm	Wind Project and Control
	38	Presence of wind project structures and EMF	Highly Migratory Species	Acoustic Telemetry	Wind Project (other receivers already placed throughout SNE WEA)
	39	EMF and Physical Disturbance	Lobster and Crab along cable route in state waters	Ventless Trap - with attached acoustic receivers	Cable Route
	40	Presence of wind project structures	Benthos -- Hard Bottom Monitoring: WTG and SPL	ROV/Video	WTG and Scour Protection Layer (SPL)
	41	Benthic Habitat Modification - Boulder Relocation	Benthos -- Hard Bottom Monitoring: Native Hard Bottom	ROV/Video	Native Hard Bottom; Undisturbed vs. Relocated Boulders
	42	Presence of wind project structures	Benthic Function -- Soft Bottom Monitoring: WTG	SPI/PV	WTG
	43	Physical disturbance of cable installation	Benthic Function -- Soft Bottom Monitoring: Cable	SPI/PV	Cable
South Fork Wind Farm	44	Presence of wind project structures	Demersal Fish	Gillnet	Wind Project and 2 Controls
	45	Presence of wind project structures	Demersal Fish	Beam Trawl	Wind Project and 3 Controls
	46	Presence of wind project structures	Lobster, Jonah Crab	Ventless Trap	Wind Project and 2 Controls
	47	Presence of wind project structures	Black Sea Bass, Scup, Tautog	Ventless Trap	Wind Project
	48	Presence of wind project structures	Supplement ongoing HMS and cod in the region	Acoustic Telemetry	Wind Project
	49	Presence of wind project structures	Benthic Function -- Soft Bottom	SPI/PV	WTG

	50	Physical disturbance of cable installation	Benthic Function -- Soft Bottom	SPI/PV	Export Cable
	51	Presence of wind project structures	Benthos -- Hard Bottom	ROV/Video/Still Images	Turbine
	52	Presence of wind project structures	Benthos -- Hard Bottom	ROV/Video/Still Images	Inter-array Cable
Sunrise Wind	53	Presence of wind project structures	Fish and Invertebrate Community	Otter Trawl	Wind Projet and 2 Controls
	54	Presence of wind project structures	Highly Migratory Species	Acoustic Telemetry - Windfarm	Wind Project; Supplemented by Telemetry Receivers in Adjacent Wind Projects
	55	EMF	American lobsters, horseshoe crabs, winter skates, sandbar sharks, sand tiger sharks, dusky sharks, and smooth dogfish	Acoustic Telemetry - Export Cable	Export Cable Route
	56	Presence of wind project structures	Benthos -- Novel Hard Bottom	ROV/Video	Turbines and Scour Protection Layer
	57	Presence of wind project structures	Benthos -- Novel Hard Bottom	ROV/Video	Cable
	58	Presence of wind project structures	Benthic Function -- Soft Bottom	SPI/PV	WTG
	59	Physical disturbance of cable installation	Benthic Function -- Soft Bottom	SPI/PV	Cable
Vineyard Wind	60	Presence of wind project structures	Fish and Invertebrate Community	Bottom Trawl	Wind Project and Control
	61	Presence of wind project structures	Lobster	Ventless Trap	Wind Project and Control
	62	Presence of wind project structures	Black Sea Bass	Fish Trap	Wind Project and Control
	63	Presence of wind project structures	Neuston	Towed Neuston Net	Wind Project and Control

	64	Presence of wind project structures	Highly Migratory Species	Acoustic Receivers	Wind Project; Supplemented by Telemetry Receivers in Adjacent Wind Projects
	65	Presence of wind project structures	Benthos -- Macroinvertebrate Community and Bottom Habitat	Drop Camera	Wind Project and Control
Coastal Virginia Offshore Wind (CVOW)	66	Presence of wind project structures	Black Sea Bass	Fish Pot (Vented and Ventless)	Wind Project
	67	Presence of wind project structures	Whelk	Fish Pot (Vented and Ventless)	Wind Project

Supplemental Table S3. Characteristics of project-level monitoring studies pertaining to data collection, experimental design, and data accessibility.

Wind Project Name	Study #	Data Types Collected	Frequency of Sampling (Season, Month)	Temporal Duration by Development Phase	Experimental Design	Method of Station Assignment	Regional Assessment that the study states it is similar to	Accessibility of QA/QC'd data and metadata
Atlantic Shores Offshore Wind - South	1	Diversity, Density (CPUE), Length, Weight, Diet	All 4 seasons	1 yr. pre; during; 3 yrs. post	Beyond BACI	Radially Gridded Random	NEAMAP gear	Requires formal data request
	2	Diversity, Density (CPUE), Length, Weight	All 4 seasons	1 yr. pre; during; 3 yrs. post	Beyond BACI	Random Selection of WTGs by block; Random orientation of transect from WTG		Requires formal data request
	3	Density, Size, Size at Age, Distribution	Summer Only	1 season	Beyond BACI	Radially Gridded Random	NJDEP gear; NEFSC methods	Requires formal data request
	4	Abundance (no./sample); Density (no./m2); Shannon-Weaver Diversity Index; Sediment Grain Size (Wentworth Scale, CMECS classification)	Once per year; Season Uncertain	Duration uncertain	BAG	WTGs and ECC randomly selected		No
	5	Species Occurrence; Community Composition;	Once per year; Season Uncertain	Duration uncertain	BAG	WTGs and ECC randomly selected		No
	6	cm-scale resolution maps of bottom morphology	Season Uncertain	Pre and Post; Duration uncertain	Before-After (Impact Only)	n/a		No

Empire Wind	7	Biomass (CPUE); Size; Community Composition	Sept-Oct only	2 yrs. pre; during; 2 yrs. post	Symmetrical BACI	Random Selection of Grid Cells; 2 Depth Strata	NEAMAP and NYSDEC Nearshore Ocean Trawl survey	Requires formal data request
	8	Abundance; MaxN; Community Composition; Demographics	All 4 seasons	2 yrs. pre; during; 2 yrs. post	BAG	Random Selection of WTGs; 2 Depth Strata	South Fork Wind Pot Survey	Requires formal data request
	9	Relative Abundance, Community Composition	All 4 seasons	2 yrs. pre; during; 2 yrs. post	BAG	Random Selection of WTGs; 2 Depth Strata		Requires formal data request
	10	Species Presence, Persistence, Movement	All 4 seasons	pre, during, and post; Duration uncertain	Before-After	Fixed Array	Studies of cod at Cox Ledge; HMS within SNE WEA; Ocean Wind; South Fork and Sunrise export cables; Previous work in Empire lease	Requires formal data request
	11	Abundance, Density; Distribution	Summer only	2 yrs. pre; during; 2 yrs. post	BACI	Systematic Grid	UMass Dartmouth SMAST drop-camera survey; HabCam - Coonamesset Farm Foundation	Requires formal data request
	12	%Cover; Relative Abundance of Macrobiota; Estimated Biomass/Biovolume; Invasive Species	late summer/early fall immediately post (0) and then yr 1, 2, 3, 5	immediately post (yr. 0); then annually for 5 yrs. post	Impact Area Only; Post Only	Stratified Random selection of WTGs; Both OSSs; Cable Systematic		Requires formal data request

	13	SPI: aRPD, Successional Stage, penetration, methane, grain size major mode, Beggiatoa PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species; Sediment Grab: percent organic matter, total organic carbon, total nitrogen, C:N; Sediment Grain Size	Late summer/Early Fall	pre but duration uncertain; immediately post (yr. 0); then annually for 5 yrs. post	BAG (Impact Area Only)	Stratified Random Selection of WTGs		Requires formal data request
	14	SPI: aRPD, Successional Stage, penetration PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Late Summer/Early Fall	pre but duration uncertain; immediately post (yr. 0); then annually for 2 yrs. post	BAG (Impact Area Only)	Systematic Selection of Cable		Requires formal data request
New England Wind	15	Abundance; Size; Length; Weight; Spatial Distribution;Community Structure	All 4 seasons	Duration uncertain	BACI	Spatially Balanced	NEAMAP	Will occur in accordance with best practices
	16	Estimates of Absolute Abundance; Sediment Grain Size on Wentworth Scale	2X yearly April-Sept	Duration uncertain	BACI	Systematic grid	SMAST; NOAA scallop stock assessment	Will occur in accordance with best practices
	17	Length, Sex, Reproductive Success; Disease; Lobster Movement	2X monthly May-Dec	Duration uncertain	BACI	Random; Stratified by Depth	DMF, and coastwide ventless trap studies (ASFMC 2015; Courchene and Stokesbury 2011); Also in other lease areas	Will occur in accordance with best practices

	18	Relatvie Abundance and Distribuiton of Planktonic e.g.,: larval lobster and fish	2X monthly May-Dec	Duration uncertain	BACI	Uncertain	Previous SMAST studies	Will occur in accordance with best practices
	19	Infaunal Density, Diversity, Community Structure; Mean Grain Size	Season Uncertain	1 yr pre; post yrs 1, 3, 5	BACI/BAG hybrid	Random	Based on Vineyard Wind 1 BHMP	Will occur in accordance with best practices
	20	Epibenthic Species Abundance, Diversity, Community Structure; %Cover; Mean Grain Size	Season Uncertain	1 yr pre; post yrs 1, 3, 5	BACI/BAG hybrid	Random	Based on Vineyard Wind 1 BHMP	No
	21	Seafloor Morphology and Structure	Season Uncertain	1 yr pre; post yrs 1, 3, 5	BACI/BAG hybrid	Random	Based on Vineyard Wind 1 BHMP	No
Ocean Wind 1	22	Biomass, Distribution, Demographics; For some species, length, weight, macroscopic evaluation of spawning condition	All 4 seasons (Jan., April, July, late Sept./early Oct.)	2 yrs. pre; during; 2 yrs. post	BACI	Random, Spatially-balanced	NEAMAP	Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP
	23	Community Composition	All 4 seasons (Jan., April, July, late Sept./early Oct.)	2 yrs. pre; during; 2 yrs. post	BACI	Random, Spatially-balanced	Stoeckle et al. 2020	No

24	Biomass, Distribution, Demographicss	All 4 seasons (Jan., April, July, late Sept./early Oct.)	2 yrs. pre; during; 2 yrs. post	BACI	Random, Spatially-balanced; The control will be stratified by habitat (soft sediment vs. shipwrecks and artificial reefs)		Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP
25	Catch, Size, Reproductive Stage Visual Assessment	All 4 seasons (Jan., April, July, late Sept./early Oct.)	2 yrs. pre; during; 2 yrs. post	BACI	Random	Reef Fish Survey (RFS) conducted by the Marine Resources Research Institute through the South Carolina Department of Natural Resources (SCDNR); Northeast Fisheries Observer Program; ASFMC ventless trap surveys for lobster	Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP

26	CPUE per anlger per species; Size; Reproductive Stage Visual Assessment	All 4 seasons (Jan., April, July, late Sept./early Oct.)	2 yrs. pre; during; 2 yrs. post	BACI	Random		Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP
27	Species composition; Volumes of clams, sea scallops and ocean quahogs; Clam shell height, meat weight, age via annular rings	August Only	2 yrs. pre; during; 2 yrs. post	BACI	Random; In the wind project, two strata (east/mean depth=27 m vs. west/mean depth=24 m) will be used	NEFSC clam dredge survey	Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP)

28	Relative Abundance	October only	2 yrs. pre	BAG	Transects through the wind project continuing outside	Plan to coordinate with the ECO-PAM glider deployments	Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP)
29	Relative Abundance	June and October	2 yrs. pre	BAG	Transects through the wind project continuing outside		Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP)

30	Movement Patterns	All 4 seasons	at least 2 yrs. pre; during; Number of post years uncertain	None state	Combination of fixed station receivers and active mobile telemetry	Data comparable to those in the ACT and MATOS networks	Integrated Ocean Observing System (IOOS) National Glider Data Assembly Center (GliderDAC), and the Regional Association (RA) of the IOOS: MARACOOS; Environmental Research Division's Data Access Program (ERDDAP)
31	%Cover, Dominant Species, Volume or Biomass,(macrobiota, relative abundance of native vs. invasive).	Summer only	immediately post (yr. 0); then annually for 5 yrs. post	After	Stratified Random selection of WTG within Benthic Habitat Strata		No
32	SPI: aRPD, Successional Stage, penetration, methane, Beggiatoa; PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Uncertain	1 yr. pre; then annually for 5 yrs.	BAG	Stratified Random within Benthic Habitat Strata		No

	33	SPI: aRPD, Successional Stage, penetration, methane, Beggiatoa; PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Uncertain	1 yr. pre; then annually for 3 yrs.	BAG	Initially random then fixed for the duration		No
	34	SPI: aRPD, Successional Stage, penetration, methane, Beggiatoa; PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Uncertain	1 yr. pre; then annually for 3 yrs.	BACI	Initially random then fixed for the duration		No
	35	SAV shoot density, percent cover	Uncertain	1 yr. pre; then post yrs. 1 and 3	BAG	Initially random then fixed for the duration		No
Revolution Wind	36	Relative Abundance, Biomass, CPUE, length, weight, macroscopic evaluation of sex and maturity stage, stomach contencts, acoustic tagging of cod	All 4 seaons	2 yrs. pre; during; 2 yrs. post	BACI	Random selection of 1 station per grid cell	NEAMAP	No
	37	Lobsters: Carapace length, Sex, Egg Status, V-notch status, Cull status, Shell Disease; Jonah Crab: Carapace Width, Ovigery, Sex, Shell Disease, Cull Status, Mortality	May/June-November	2 yrs. pre; during; 2 yrs. post	BACI; Also doing a gradient study during operation	Random selection of 1 sampling aliquot within spatial grid	SNECVTS survey (Collie and King 2016); ASMFC Protocols	No
	38	Distribution and Movement	All 4 season	Pre; During; Post; Duration Uncertain	Before-During-After	Fixed acoustic receiver array	Data comparable to MATOS data	Plan to share detection data with researchers on MATOS, OTC, or similar

39	Lobsters: Count, Carapace Length, Sex, shell hardness, shell disease state, egg stage for females bearing eggs, cull status (or claw damage), and V-notch presence; Jonah and Rock Crab: Count, Sex, Carapace Width Egg status, Molt Condition, and Shell Disease; Fish: Count, Size	All months; 2X per month	2 yrs. pre; during; Post annually for 5 yrs.	BAG	Systematic Selection of Fixed Locations	RIDEM DMF Ventless Trap Survey (RIVTS)	No
40	%Cover, Dominant Species, Volume or Biomass	Late Summe	Post Only; Immediately after construction and then annually for 3 yrs.	After	Stratified Random within Benthic Habitat Strata		Requires formal data request
41	Rugosity, Density, Orientation, %Cover, Dominant Species, Relative Abundance, Non-native species	Late Summe	1 yr. pre; Annually for 5 yrs. post	Uncertain	Systematic Random		Requires formal data request
42	SPI: aRPD, Successional Stage, penetration, methane, Beggiatoa; PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Late Summe	1 yr. pre; Annually for 5 yrs. post	BAG	Uncertain		Requires formal data request
43	SPI: aRPD, Successional Stage, penetration, methane, Beggiatoa; PV: cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Late Summe	Post Only; Immediately after construction and then annually for 3 yrs.	BAG	Uncertain		Requires formal data request

South Fork Wind	44	Abundance, Biomass, Length, Weight, Stomach Contents, Cod sex and reproductive stage	April-June; Oct.-Dec. (2X monthy)	2 yrs. pre; 2 yrs. post	BACI	Systematic		Requires formal data request
	45	Abundance, Biomass, Length, Weight, Stomach Contents, Cod sex and reproductive stage	All 4 months (1X monthly)	2 yrs. pre; 2 yrs. post	BACI	Systematic	NEAMAP	Requires formal data request
	46	Lobster: Carapace Length, Sex, Eggs, V-notch status, Cull Status, Disease, Mortality; Crab: Carapace Width, Sex, Ovigery Status, Cull Status, Mortality	May-Nov (2X monthly)	2 yrs. pre; 2 yrs. post	BACI	Spatially Balanced Random Station Selection (1 random aliquote per grid cell)	ASMFC; SNECVTS	Requires formal data request
	47	Biomass, Abundance, Richness, Length	April-Oct. (1X monthly)	Before, After; Duration Uncertain	BAG	Random selection of WTG	RIDEM	Requires formal data request
	48	Movement Patterns	All 4 seasons	Before, During, After	None Stated	Fixed Receiver Array; Autonomous Glider Tracks		Requires formal data request
	49	aRPD, Successional Stage, feeding voids	Late Summer	Pre; Immediately After; Yrs. 1, 3, and 5 post	BAG	Random WTG selection; Fixed for the survey		Requires formal data request
	50	aRPD, Successional Stage, feeding voids	Late Summer	Pre; Immediately After; Yrs. 1, 3, and 5 post	BAG	Systematic		Requires formal data request
	51	percent cover and relative abundance of native vs. non-native organisms	Late Summer	Immediately post; 6, 12, 24 moths post	After Only	Random WTG selection		Requires formal data request

	52	percent cover and relative abundance of native vs. non-native organisms	Late Summer	Immediately post; 6, 12, 24 moths post	After Only	Systematic Random selection of boulders		Requires formal data request
Sunrise Wind	53	Relative Abundance, Size, Community Composition, Condition, Reproductive Status, Diet Composition for Black Sea Bass and Summer Flounder; For Lobsters: Carapace Length, Sex, Egg Status, V-notch Status, Cull Status, Shell Disease	All 4 Seasons	2 yrs. Pre; During; 2 yrs. Post	BACI	1 Randomly Selected Station within Each Grid Cell	NEAMAP; Lobster Data similar to MADMF and RIDEM ventless trap surveys	No
	54	Presence, Residency, Movements, Connectivty among Lease Sites,	All 4 Seasons	Before, During, Post; Duration Uncertain	Compare Before, During, After	Fixed Receiver Array	Complementary with other Orsted Acoustic Telemetry Studies	Sharing Telemetry Data with Researchers in ACT, MATOS, or similar network; Sharing cod data with cod researchers
	55	Movement, Behavior, Residency, Movement Rate, Depth Preference, Acceleration, Number of Individuals.	All 4 Seasons	Before, During, Post; 5 years Total	Compare Before, During, After	2 Fixed Receiver Arrays (Nearshore and Offshore)	Complementary with other Orsted Acoustic Telemetry Studies	Sharing Telemetry Data with Researchers in ACT, MATOS, or similar network;
	56	%Cover, Dominant Species, Volume (Biomass), Non-Native Species	Late Summer	Immediately after, then annually for 5 years	After Only	Random WTG Selection with Habitat		No

	57	%Cover, Dominant Species, Volume (Biomass), Non-Native Species	Late Summer	Immediately after, then annually for 5 years	After Only	Random WTG Selection with Habitat		No
	58	**SPI:** aRPD, Successional Stage, penetration, methane, Beggiatoa; **PV:** cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Later Summer	Before; Immediately after, then annually for 5 years	BAG	Random WTG Selection with Habitat		No
	59	**SPI:** aRPD, Successional Stage, penetration, methane, Beggiatoa; **PV:** cover (macrobiota, shells, cobble), presence/absence of sensitive or invasive species	Later Summer	Before; Immediately after, then annually for 3 years	BAG	Random Cable Segment Selection with Habitat		No
Vineyard Wind	60	Abundance, Spatial Distribution, Size, Length, Weight,	All 4 Seasons	Before; During; After; Duration Uncertain	BACI		NEAMAP and ASFMC	No
	61	Abundance, Distribution, length, sex, carapace length, shell hardness, claws, shell damage, shell disease, egg status, reproductivity success	May-October	Before; During; After; Duration Uncertain	BACI	Random aliquot selection within each grid cell	MADFM, RIDEM; Also Similar to State Surveys Throughout New England plus NY	No
	62	Abundance, Diet, Age, Fecundity	May-October	Before; During; After; Duration Uncertain	BACI	Random aliquot selection within each grid cell		No

	63	Larval Lobster Abundance	May-October	Before; During; After; Duration Uncertain	BACI	Random aliquot selection within each grid cell		No
	64	Presence, Residency, Movements, Connectivty among Lease Sites,	All 4 Seasons	Before; During; After; Duration Uncertain	Compare Before, During, After	Fixed Receiver Array	Complementary with other Orsted Acoustic Telemetry Studies	Sharing Telemetry Data with Researchers in ACT, MATOS, or similar network; Sharing cod data with cod researchers
	65	Presence, %Cover, Substrate Type	Summer, Fall	Before; During; After; Duration Uncertain	BACI	Systematic Grid	SMAST Drop Camera Studies	No
Coastal Virginia Offshore Wind (CVOW)	66	Total Catch, Length, Potentially also gut contents, otoliths, tissue samples	Spring, Fall	2 yrs. Pre	BAG	Systematic	ASMFC Coastwide Ventless Lobster Trap Survey	No
	67	Relative Abundance, Length, Demographics, Shell length and width, Age, Reproductive Status	Nov-March (2X monthly); April-Oct. (1X monthly)	2 yrs. Pre	BAG	Systematic	ASMFC Coastwide Ventless Lobster Trap Survey	No

Supplemental Table S4. Project-level monitoring studies as they relate to comprable NOAA Fisheries surveys

Wind Project Name	Study #	What existing NEFSC Time Series is currently sampling habitat or species that are foci of proposed monitoring?	Does this survey provide a sample that is functionally equivalent to the relevant NEFSC survey?	Is stated objective to supplement NEFSC time series?	Will survey be calibrated to existing NEFSC survey?
Atlantic Shores Offshore Wind - South	1	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	2	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	3	Atlantic Surfclam and Ocean Quahog Surveys	No	No	No
	4	n/a	n/a	No	No
	5	n/a	n/a	No	No
	6	n/a	n/a	No	No
Empire Wind	7	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	8	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	9	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	10	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	11	Sea Scallop Dredge Survey/Integrated Benthic Habitat Survey	No	No	No
	12	n/a	n/a	No	No
	13	n/a	n/a	No	No
	14	n/a	n/a	No	No
New England Wind	15	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	16	Sea Scallop Dredge Survey/Integrated Benthic Habitat Survey	No	No	Maybe
	17	n/a	n/a	No	No
	18	n/a	n/a	No	No
	19	n/a	n/a	No	No
	20	n/a	n/a	No	No
	21	n/a	n/a	No	No
	22	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	23	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	24	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	25	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	26	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No

	27	Sea Scallop Dredge Survey/Integrated Benthic Habitat Survey	Maybe	No	No
Ocean Wind 1	28	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	29	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	30	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	31	n/a	n/a	No	No
	32	n/a	n/a	No	No
	33	n/a	n/a	No	No
	34	n/a	n/a	No	No
	35	Sea Scallop Dredge Survey/Integrated Benthic Habitat Survey	No	No	No
Revolution Wind	36	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	37	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	38	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	39	n/a	n/a	No	No
	40	n/a	n/a	No	No
	41	n/a	n/a	No	No
	42	n/a	n/a	No	No
	43	n/a	n/a	No	No
South Fork Wind	44	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	45	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	46	n/a	n/a	No	No
	47	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	48	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	49	n/a	n/a	No	No
	50	n/a	n/a	No	No
	51	n/a	n/a	No	No
	52	n/a	n/a	No	No
Sunrise Wind	53	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	54	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	55	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	56	n/a	n/a	No	No
	57	n/a	n/a	No	No
	58	n/a	n/a	No	No
	59	n/a	n/a	No	No

	60	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	61	n/a	n/a	No	No
	62	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
Vineyard Wind	63	Ecosystem Monitoring Survey	No	No	No
	64	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
	65	Sea Scallop Dredge Survey/Integrated Benthic Habitat Survey	No	No	Maybe
Coastal Virginia	66	Fall Bottom Trawl; Spring Bottom Trawl	No	No	No
Offshore Wind (CVOW)	67	n/a	n/a	No	No

Supplemental Table S5. Evaluation of whether project-level monitoring studies address the four main impacts of wind development on long term scientific surveys as outlined in the NOAA/BOEM Survey Mitigation Strategy (Hare et al. 2022).

Wind Project Name	Study #	Will study address survey impact #1: Preclusion-displacement by infrastructure?	Will study address survey impact #2: Impacts to Statistical Survey Design?	Will study address survey impact #3: Effects of Habitat Change on Species Abundance, Distribution, Vital Rates, etc.?/Will the Study Evaluate How Impacts on Species Change over the Lifetime fo the Project?	Will study address survey impact #4: Impacts to sampling outside of developments by wind energy-induced transit effects that can result in lost sampling time?
Atlantic Shores Offshore Wind - South	1	No	No	No/No	No
	2	No	No	No/No	No
	3	No	No	No/No	No
	4	No	No	No/No	No
	5	No	No	No/No	No
	6	No	No	No/No	No
Empire Wind	7	No	No	No/No	No
	8	No	No	No/No	No
	9	No	No	No/No	No
	10	No	No	No/No	No
	11	No	No	No/No	No
	12	No	No	No/No	No
	13	No	No	No/No	No
	14	No	No	No/No	No
New England Wind	15	No	No	No/No	No
	16	Maybe	Maybe	Maybe/No	Maybe
	17	No	No	No/No	No
	18	No	No	No/No	No
	19	No	No	No/No	No
	20	No	No	No/No	No
	21	No	No	No/No	No
	22	No	No	No/No	No
	23	No	No	No/No	No
	24	No	No	No/No	No
	25	No	No	No/No	No

Ocean Wind 1	26	No	No	No/No	No
	27	No	No	No/No	No
	28	No	No	No/No	No
	29	No	No	No/No	No
	30	No	No	No/No	No
	31	No	No	No/No	No
	32	No	No	No/No	No
	33	No	No	No/No	No
	34	No	No	No/No	No
	35	No	No	No/No	No
Revolution Wind	36	No	No	No/No	No
	37	No	No	No/No	No
	38	No	No	No/No	No
	39	No	No	No/No	No
	40	No	No	No/No	No
	41	No	No	No/No	No
	42	No	No	No/No	No
	43	No	No	No/No	No
South Fork Wind	44	No	No	No/No	No
	45	No	No	No/No	No
	46	No	No	No/No	No
	47	No	No	No/No	No
	48	No	No	No/No	No
	49	No	No	No/No	No
	50	No	No	No/No	No
	51	No	No	No/No	No
	52	No	No	No/No	No
Sunrise Wind	53	No	No	No/No	No
	54	No	No	No/No	No
	55	No	No	No/No	No
	56	No	No	No/No	No
	57	No	No	No/No	No
	58	No	No	No/No	No
	59	No	No	No/No	No
	60	No	No	No/No	No

Vineyard Wind	61	No	No	No/No	No
	62	No	No	No/No	No
	63	No	No	No/No	No
	64	No	No	No/No	No
	65	Maybe	Maybe	Maybe/No	Maybe
Coastal Virginia Offshore Wind (CVOW)	66	No	No	No/No	No
	67	No	No	No/No	No