Appendix B Activity Stressor Matrices

Environmental Impact Statement/

Overseas Environmental Impact Statement

Hawaii-California Training and Testing

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APPENDIX B ACTIVITY STRESSOR MATRICES

This appendix contains four matrices. The first two matrices in this appendix list the training and testing activities that occur in the Hawaii-California Training and Testing Study Area and their associated stressors. The third matrix shows the stressors associated with the Modernization and Sustainment of Ranges activities. The fourth matrix lists the resources analyzed in this Environmental Impact Statement/Overseas Environmental Impact Statement and the stressors they are potentially affected by.

Table B-1: Stressors by Training Activity

										Biolo	aical	Resour	ces			-					Phy	sical R	Resou	rces				Hum	nan Re	esourc	es		
							Ι				J						_				Air			nts ar	nd	Cult	ural		econ			іс Неа	ılth
		Acc	oustic	Stres	sors		Explo		Energy	Stres	sors	-		isturb Stres		and	_	lement	Inge.		Quality			Qualit		Reso			sour			Safety	
							Stres	55015					Strike	Sires	5015		Stres	55015	Stre	55075	Stressors		Stre	ssors		Stres	sors	St	resso	rs	Str	essor	5
Hawaii-California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
U.S. NAVY AND MARINE CORPS																																	
MAJOR TRAINING EXERCISES – LARGE INTEGRATED ANTI	1	MAR	1 .	Т.	ARE		ı		Г		1		Τ.	1 .	ı	ı														ı		<u> </u>	
Composite Training Unit Exercise (Strike Group)	✓		✓	✓						✓		√	✓	✓			✓	✓		✓	√		✓	✓	✓								
Rim of the Pacific Exercise	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
MAJOR TRAINING EXERCISES – MEDIUM INTEGRATED AN	NTI-S	UBM	ARIN	E WA	RFAR	E							_																				
Task Force/Sustainment Exercise	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
INTEGRATED/COORDINATED ANTI-SUBMARINE WARFAR	RE TR	AININ	NG																														
Independent Deployer Certification Exercise/Tailored Surface Warfare Training			✓	✓						✓		✓	✓								✓												
Medium Coordinated Anti-Submarine Warfare	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Small Coordinated Anti-Submarine Warfare	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
INTEGRATED/COORDINATED TRAINING - OTHER																•																	
Composite Training Unit Exercise (ARG/MEU)	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
Innovation and Demonstration Exercise	✓		✓	✓	✓		✓	✓		✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓								
Integrated Air Missile Defense Exercise			✓	✓	✓			✓		✓		✓	✓	✓				✓	✓		✓	✓	✓	✓	✓								
Large Amphibious Exercise			✓	✓						✓		✓	✓		✓						✓						✓	✓	✓	✓	✓	✓	✓
Multi-Warfare Exercise	✓		✓	✓	✓					✓		✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓								
AIR WARFARE	•																																
Air Combat Maneuvers				✓						✓			✓								✓							✓	✓	✓			
Air Defense Exercise			✓	✓						✓		✓	✓								✓							✓	✓	✓			
Gunnery Exercise Air-to-Air Medium and Small Caliber				✓	✓					✓			✓	✓					✓		✓		✓				✓	✓	✓	✓			✓
Gunnery Exercise Surface-to-Air Large and Medium Caliber			✓		✓					✓		✓		✓							✓		✓		✓								✓
High-Energy Laser Exercise (Surface-to-Air)			✓								✓	✓									✓												
Medium Range Interceptor Capability				✓	✓			✓					✓	✓					*		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Missile Exercise (Air-to-Air)				✓	✓			✓		✓			✓	✓				✓	✓	✓	✓	✓	✓	✓	✓								
Missile Exercise – Man-Portable Air Defense System				✓	✓			√					✓	✓	✓				✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
Missile Exercise (Surface-to-Air)			✓	✓	✓			✓		✓		✓	✓	✓					✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

Table B-1: Stressors by Training Activity (continued)

										Biolo	ogical	Resour	ces								Phy.	sical F	Resou	rces				Hun	nan R	Resourc	ces		
							Ī.,							,		,					Air			nts aı	nd	Cult	ural	Socio	oecon	nomic	Publ	ic Heal	lth
		Acc	oustic	Stres	sors		Stre	osive	Energ	y Stre.	ssors	Physi		Sturb Stres		ana	Entang Stres		_	stion ssors	Quality	и	'ater	Quali	ty	Reso	urce	Re	esour	ce	&	Safety	,
							Sire.	33013				•	JUINE	30163	3013		300		300		Stressors		Stre	ssors		Stres	sors	St	tresso	rs	Sti	ressors	;
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
AMPHIBIOUS WARFARE	Г	T	Ι,	1 /	I	T	ı	ı		Ι,	1			ı	ı	T		Ī		I		ı		ı	ı	I I							
Amphibious Assault	-		√	√						√		√	√								√						√	√	V	V	V	√	<u> </u>
Amphibious Operations in a Contested Environment			✓	✓	✓			✓		✓		✓	✓	✓	✓				✓		✓		✓	✓	✓		✓	✓	✓	√	✓	✓	✓
Amphibious Raid			✓	✓						✓		✓	✓								✓						✓	✓	✓	✓	✓	✓	✓
Amphibious Vehicle Maneuvers			✓									✓			✓						✓						✓	✓	✓	✓	✓	✓	✓
Expeditionary Fires Exercise/Supporting Arms Coordination Exercise			✓	✓						✓		✓	✓								✓						✓	✓	✓	✓	✓	✓	✓
Naval Surface Fire Support Exercise – At Sea			✓		✓		✓			✓		✓		✓					✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Naval Surface Fire Support Exercise – Land-Based Target			✓		✓					✓		✓		✓					✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓
Non-Combat Amphibious Operation			✓	✓						✓		✓	✓								✓						✓	✓	✓	✓	✓	✓	✓
Shore-to-Surface Artillery Exercise			✓		✓		✓	✓		✓		✓		✓					✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
Shore-to-Surface Missile Exercise			✓		✓		✓	✓		✓		✓		✓					✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
ANTI-SUBMARINE WARFARE								•							•							•		•									
Anti-Submarine Warfare Torpedo Exercise – Helicopter	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
Anti-Submarine Warfare Torpedo Exercise – Ship	✓		✓							✓		✓		✓			✓			✓	✓		✓	✓	✓								
Anti-Submarine Warfare Torpedo Exercise – Submarine	✓		✓							✓		✓		✓			✓				✓		✓	✓	✓								
Anti-Submarine Warfare Tracking Exercise – Helicopter	✓		✓	✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
Anti-Submarine Warfare Tracking Exercise –Unmanned Surface Vessel	✓		✓		✓					✓		✓		✓			✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft	✓		✓	✓						✓		✓	✓	✓			√	✓		✓	√		✓	✓	✓								
Anti-Submarine Warfare Tracking Exercise – Ship	✓		✓							✓		✓		✓			✓				✓		✓	✓	✓								\neg
Anti-Submarine Warfare Tracking Exercise – Submarine	✓		✓							✓		✓		✓			✓				✓		✓	✓	✓								
Training and End-to-End Mission Capability Verification - Torpedo	✓		✓				✓			✓		✓		✓	✓		√		✓		✓	✓	✓	✓	✓								

Table B-1: Stressors by Training Activity (continued)

										Biolo	ogical	Resour	ces								Phy.	sical F	esou	rces				Hum	nan Re	sourc	es	
		A = -		Chunn			Expl	osive	5 110111	C4		Physi	ical D	isturb	ance	and	Entangl	lement	Inges	stion	Air			nts ar		Cult			oecono			Health
		ACC	oustic	Stress	sors		Stre	ssors	Energ	y Stre.	ssors		Strike	Stres	sors		Stres	sors	Stres	sors	Quality Stressors	V	Stres	Qualit ssors	ιy	Reso Stres			esourc tressor			afety essors
										səs			ke						I S	l S												
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials Munitions	Military Expended Materials Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy Physical Interactions
ELECTRONIC WARFARE				1										1	1																	
Counter Targeting Chaff Exercise – Aircraft				✓						✓			✓	✓						✓	✓		✓	✓	✓							
Counter Targeting Chaff Exercise – Ship			✓							✓		✓		✓						✓	✓		✓	✓	✓							
Counter Targeting Flare Exercise				✓						✓			✓	✓						✓	✓		✓	✓	✓							
Electronic Warfare Operations			✓	✓						✓		✓	✓								✓											
EXPEDITIONARY WARFARE	•													•																		
Dive and Salvage Operations			✓							✓		✓									✓						✓	✓	✓	✓	✓	✓ ✓
Gunnery Exercise Ship-to-Shore			✓		✓							✓		✓					✓		✓		✓				✓	✓	✓	✓	✓	√ ✓
Obstacle Loading			✓				✓					✓		✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√ ✓
Personnel Insertion/Extraction – Air			✓	✓	✓		✓			✓		✓	✓	✓					✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	√
Personnel Insertion/Extraction – Surface and Subsurface			✓	✓	✓		✓					✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Personnel Insertion/Extraction – Swimmer/Diver			✓		✓		✓					✓		✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√
Port Damage Repair		✓	✓									✓			✓	✓					✓						✓	✓	✓	✓	✓	✓ ✓
Small Boat Attack			✓		✓					✓		✓		✓					✓		✓		✓				✓	✓	✓	✓	✓	√
MINE WARFARE																																
Airborne Mine Countermeasure – Mine Detection			✓	✓						✓		✓	✓	✓	✓		✓				✓		✓		✓		✓	✓	✓	✓	✓	√
Airborne Mine Laying			✓	✓						✓		✓	✓	✓			✓				✓		✓	✓	✓		✓	✓	✓	✓	✓	√ ✓
Amphibious Breaching Operations			✓				✓			✓		✓		✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√
Civilian Port Defense – Homeland Security Anti- Terrorism/Force Protection Exercise	✓		✓	✓			✓			✓		✓	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mine Countermeasure Exercise – Ship Sonar	✓		✓							✓		✓									✓						✓	✓	✓	✓	✓	√
Mine Countermeasures Mine Neutralization Remotely Operated Vehicle Operations	✓		✓	✓			✓			✓		✓	✓	✓	✓		✓		✓		√	✓	✓	✓	✓	✓	√	✓	✓	✓	✓	✓ ✓
Mine Countermeasures – Towed Mine Neutralization			✓	✓					✓	✓		✓	✓								✓						✓	✓	✓	✓	✓	√ ✓
Mine Neutralization Explosive Ordnance Disposal			✓				✓			✓		✓		✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Submarine Mine Avoidance Exercise	✓		✓							✓		√		✓			✓		✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	√ √
Submarine Mobile Mine and Mine Laying Exercise	✓		✓							✓		✓		✓							✓		✓		✓		✓	✓	✓	✓	✓	√ √
Surface Ship Object Detection	✓		✓							✓		✓		✓	✓		✓				✓		✓		✓		✓	✓	✓	✓	✓	√ √

Table B-1: Stressors by Training Activity (continued)

										Bio	logica	ıl Resc	ource	es								Phy	sical	Resou	ırces				Hun	nan R	Resour	ces		
		Acc	oustic	Stres	sors		_	osive	Energ	y Stre	essors	Ph	-		turba Stress		and	Entang Stres	lement ssors	_	stion	Air Quality Stressors		/ater	nts a Quali ssors		Cult Reso Stres	urce	Re	esour tresso		&	lic Hed Safet tressoi	y
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device	Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
MINE WARFARE (cont.)		ı	ı	T	ı	ı	ı	T	T	1	I	ı	ı	I	ı	ı	I		1	ı	1	T	ı		ı	ı	1		ı	ı				
Training and End-to-End Mission Capability Verification – Mobile Mine and Mine Laying Exercise			✓							✓		✓			✓			✓				✓		✓	✓	✓								
Underwater Demolition Qualification and Certification			✓				✓			✓		✓				✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Underwater Demolition Multiple Charge – Large Area Clearance			✓				✓					✓	,		✓	✓						✓	✓				✓	✓	✓	✓	✓	✓		✓
Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation			✓	✓						~		✓	^	✓	✓	✓		✓				√		✓		✓		✓	√	✓	√	✓	✓	✓
SURFACE WARFARE	_																			l														
Bombing Exercise Air-to-Surface			✓	✓			✓			✓		√	′	✓	✓					✓	✓	✓	✓	✓	✓	✓					<u> </u>			
Gunnery Exercise Air-to-Surface – Medium-Caliber			✓	✓	✓		✓			✓		✓	<i>'</i>	✓	✓					✓	✓	✓	✓	✓	✓	✓								
Gunnery Exercise Air-to-Surface – Small-Caliber			✓	✓	✓					✓		✓	′	✓	✓					✓	✓	✓		✓	✓	✓								
Gunnery Exercise Surface-to-Surface Boat – Medium-Caliber			✓		✓		✓					✓			✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gunnery Exercise Surface-to-Surface Boat – Small-Caliber			✓		✓							✓			✓					✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Gunnery Exercise Surface-to-Surface Ship – Large Caliber			✓		✓		✓			✓		✓			✓					✓		✓	✓	✓		✓								
Gunnery Exercise Surface-to-Surface Ship – Medium Caliber			✓		✓		✓			✓		✓			✓					✓		✓	✓	✓	✓	✓								
Gunnery Exercise Surface-to-Surface Ship – Small-Caliber			✓		✓					✓		✓			✓					✓		✓		✓		✓								
Laser Targeting – Aircraft			✓	✓						✓	✓	✓		✓	✓							✓		✓	✓	✓					<u> </u>			
Laser Targeting – Ship			✓	✓	✓					✓	✓	✓		✓	✓							✓												
Maritime Security Operations			✓	✓	✓					✓		✓		✓	✓					✓		✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Missile Exercise Air-to-Surface			✓	✓	✓		✓			✓		✓		✓	✓					✓	✓	✓	✓	✓	✓	✓								
Missile Exercise Air-to-Surface Rocket				✓			✓			✓				✓	✓					✓	✓	✓	✓	✓	✓	✓								
Missile Exercise Surface-to-Surface			✓		✓		✓			✓		✓			✓					✓	✓	✓	✓	✓	✓	✓								
Sinking Exercise	✓		✓	✓	✓		✓			✓		✓	′	✓	✓			\checkmark		✓		✓	✓	✓	✓	✓								
Surface Warfare Torpedo Exercise – Submarine	✓		✓									✓	<u> </u>		✓			✓				✓		✓	✓	✓								
Training and End-to-End Mission Capability Verification – Submarine Missile Maritime					✓		✓					✓	,		✓					✓	√	√	✓	✓	✓	✓								

Table B-1: Stressors by Training Activity (continued)

										Biolo	gical	Resour	ces								Phy	sical F	Resou	rces				Hun	nan R	esour	ces		
							Evnl	osive				Physi	ical Di	isturb	anco	and	Entana	lement	Ingo	stion	Air	Se	dime	nts ar	nd	Cult	ural	Socio	econ	omic	Publ	lic Hea	ılth
		Acc	oustic	Stres	sors			ssors	Energ	y Stre	ssors	-		Stres		unu	Stres		_	ssors	Quality	И		Qualit	ty	Reso			esour			Safety	_
										<u>ν</u>									1	1 1	Stressors		Stres	ssors		Stres		St	resso		Sti	ressor	5
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials - Munitions	Military Expended Materials - Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
OTHER TRAINING EXERCISES																																	
Aerial Firefighting				✓					✓				✓								✓												
At-Sea Vessel Refueling Training			✓									✓									✓												
Combat Swimmer/Diver Training and Certification			✓									✓									✓						✓	✓	✓	✓	✓	✓	✓
Kilo Dip	✓			✓						✓			✓	✓			✓		✓		✓		✓		✓								
Multi-Domain Unmanned Autonomous Systems	✓		✓	✓			✓			✓		✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Precision Anchoring			✓							✓		✓			✓						✓		✓				✓	✓	✓	✓	✓	✓	✓
Ship-to-Shore Fuel Transfer Training			✓							✓		✓									✓						✓	✓	✓	✓	✓	✓	✓
Submarine and UUV Subsea and Seabed Warfare Exercise	✓		✓		✓		✓							✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Submarine Navigation Exercise	✓											✓									✓						✓	✓	✓	✓	✓	✓	✓
Submarine Sonar Maintenance and Systems Checks	✓											✓									✓						✓	✓	✓	✓	✓	✓	✓
Submarine Under Ice Training and Certification	✓											✓		✓			✓				✓		✓	✓	✓						1	<u> </u>	
Surface Ship Sonar Maintenance and Systems Checks	✓		✓							✓		✓									✓						✓	✓	>	✓	✓	✓	✓
Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors			✓		✓		✓							✓			✓		✓		✓	✓	✓	✓	✓								
Training and End-to-End Mission Capability Verification – UAV			✓	✓	✓		✓						✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓								
Underwater Survey			✓									✓			✓						✓						✓	✓	✓	✓	✓	✓	✓
Unmanned Aerial System Training			✓	✓						✓		✓	✓	✓							✓		✓	✓	✓								
Unmanned Underwater Vehicle Training -Certification and Development Exercises	✓		✓	✓						✓		✓	✓	✓	✓		✓				√												
Waterborne Training			✓									✓									✓						✓	✓	✓	✓	✓	✓	✓

Table B-1: Stressors by Training Activity (continued)

										Biol	ogical	Resoul	rces								Phy	sical F	Resou	rces				Hum	nan Re	esourc	ces		
							Fynl	osive						isturb	ance	and	Entana	lement	Inge:	stion	Air			nts an	nd	Culti	ural	Socio	pecon	omic	Publi	с Неа	lth
		Acc	oustic	Stres	sors		_	ssors	Energ	y Stre	ssors	-		Stres		una	Stres		Stres		Quality	И		Qualit	ty	Reso			esour			Safety	
										S			ا م						1	1	Stressors		Stres	5015		Stres		31	resso		30	ressors	
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials · Munitions	Military Expended Materials Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
U.S. COAST GUARD									-			-				-	-																
AIR WARFARE	Τ	l I	./	T		l	T T	Ι	Γ	√	T	./	1	√	T	1 1			√	1		√	√		√	Т				$\overline{}$	$\overline{}$	$\neg \tau$	
Gunnery Exercise Surface-to-Air Large Caliber			∨		∨					∨		✓ ✓		∨					<u>√</u>		V	•	∨		∨						\rightarrow	\longrightarrow	_
Gunnery Exercise Surface-to-Air Medium Caliber ELECTRONIC WARFARE										<u> </u>																							
Counter Targeting Chaff Exercise – Ship	Т	T	./	Т	I	I	Τ	I	I	√	Τ	✓	T	√	1	П		П		./			√	√	√	Ι				$\overline{}$	$\neg \tau$	$\neg \tau$	
			./	√						V ✓		√	✓	✓						√	V		√	√	√					\vdash	\dashv	\dashv	_
Counter Targeting Flare Exercise EXPEDITIONARY WARFARE				'									'	<u> </u>										·	·								
Underwater Construction Team Training	Т	Π	√	Τ			Π	Ι	Ι	Т	Τ	√	T	T	✓	П					 					Ι	✓	√	✓	✓	√	✓	√
SURFACE WARFARE			<u> </u>						<u> </u>						<u> </u>															-	-		
Gunnery Exercise Air-to-Surface Medium Caliber	П		√	✓	✓		✓	Ι	Ι	√	Π	√	√	√					√	✓	✓	✓	√	√	√	Ι				$\overline{}$	\neg	\neg	
Gunnery Exercise Surface-to-Surface Boat Medium Caliber			✓		√		√					√		✓					✓	✓	✓	√	✓	√	✓					一十	$\overline{}$	一十	_
Gunnery Exercise Surface-to-Surface Boat Small Caliber			✓		✓							✓		✓					✓	✓	✓		✓	✓	✓					$\overline{}$		- 	
Gunnery Exercise Surface-to-Surface Ship Large Caliber			✓		✓		✓			✓		✓		✓					✓		✓	✓	✓		✓						\dashv	$\overline{}$	
Gunnery Exercise Surface-to-Surface Ship Medium Caliber			✓		✓		✓			✓		√		✓					✓		✓	✓	✓	✓	✓								
Gunnery Exercise Surface-to-Surface Ship Small Caliber			✓		✓					✓		✓		✓					✓		✓		✓		✓								
Laser Targeting – Ship			✓							✓	✓	✓									✓									1			
Maritime Security Operations			✓	✓	✓					✓		✓	✓	✓					✓		✓		✓	✓	✓		✓	✓	✓	√	✓	✓	✓
OTHER TRAINING ACTIVITIES	<u> </u>								<u> </u>																								
Precision Anchoring			✓							✓		✓			✓						✓		✓				✓	✓	✓	✓	✓	✓	✓
Search and Rescue			✓	✓						✓		✓	✓	✓						✓	✓						✓	✓	✓	✓		✓	✓
Unmanned Aerial System Training			✓	✓						✓		✓	✓	✓							✓		✓	✓	✓					i		\neg	
Unmanned Underwater Vehicle Training –Certification and Development Exercises	✓		✓	✓						✓		✓	✓	✓	✓		✓				✓												
Waterborne Training			✓									✓									✓						✓	✓	✓	✓	✓	✓	✓

Table B-1: Stressors by Training Activity (continued)

									E	Biolog	gical I	Resourc	ces								Phy:	sical I	Resou	rces				Hun	nan Re	esourc	es		
		Acc	oustic	Stres	sors		Explos Stress		Energy S	Stress	sors	Physic		isturb Stres		and	_	lement ssors	_	stion ssors	Air Quality Stressors			nts an Qualit		Cult Reso Stres	urce	Re	econo esourc ressoi	ce	& S	c Heal Safety essors	
Hawaii California Training Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
U.S. ARMY																																	
AIR WARFARE																																	
Missile Exercise – Man Portable Air Defense System				✓	✓			✓					✓	✓					✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓ .	✓
AMPHIBIOUS WARFARE																																	
Shore-to-Surface Artillery Exercise			✓		✓		✓	✓		✓		✓		✓					✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
Shore-to-Surface Missile Exercise			✓		✓		✓	✓		✓		✓		✓					✓	✓	✓	✓	✓	✓		✓		✓	✓	✓			✓
SURFACE WARFARE																																	
Gunnery Exercise Surface-to-Surface Boat Medium Caliber			✓		✓		✓					✓		✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Gunnery Exercise Surface-to-Surface Boat Small Caliber			✓		✓							✓		✓					✓	✓	✓		✓				✓	✓	✓	✓			✓
U.S. AIR FORCE																																	
AIR WARFARE																																	
Air Combat Maneuvers				✓						✓			✓								✓		✓			✓		✓	✓	✓			✓
Gunnery Exercise (Air-to-Air) Medium Caliber				✓	1					✓			✓	✓					✓		✓		✓				✓	✓	✓	✓			✓

Table B-2: Stressors by Testing Activity

										Riolo	aical	Resour	cos			-					Phy	sical I	Pasau	rcoc				Цип	an D	esourc	coc		
										БІОІО	gicar	Resour	tes								Air			nts ar	nd .	Cultu	ural					lic Hea	alth
		Aco	ustic	Stress	ors		Explo		Energy	Stres	sors	-	ical D			and	Entang		_	stion	Quality			Qualit		Reso			esour			Safety	
							Stres	ssors					Strike	Stres	sors		Stres	ssors	Stres	ssors	Stressors		Stre			Stres	sors	St	resso	rs		ressor	-
Hawaii California Testing Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
NAVAL AIR SYSTEMS COMMAND																																	
AIR WARFARE																																	
Air Combat Maneuver Test				✓	✓			✓		✓			✓	✓				✓	✓	✓	✓	✓	✓	✓	✓								
Air Platform-Vehicle Test				✓						✓			✓								✓												
Air Platform Weapons Integration Test			✓	✓	✓					✓		✓	✓	✓				✓			✓		✓	✓	✓								
Air-to-Air Missile Test			✓	✓	✓		✓	✓		✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓								
Intelligence, Surveillance, and Reconnaissance Test				✓						✓			✓								✓						✓	✓	✓	✓		✓	✓
Large Force Test Event			✓	✓						✓		✓	✓	✓						✓	✓						✓	✓	✓	✓		✓	✓
Surface-to-Air Gunnery Test – Large Caliber			✓	✓	✓			✓		✓		✓	✓	✓				✓	✓		✓	✓	✓	✓	✓								
Surface-to-Air Gunnery Test – Medium Caliber			✓	✓	✓			✓		✓		✓	✓	✓				✓	✓		✓	✓	✓	✓	✓								
Surface-to-Air High-Energy Laser Test			✓	✓	✓					✓	✓	✓	✓	✓				✓		✓	✓		✓	✓	✓								
Surface-to-Air High-Power Microwave Test			✓	✓						✓	✓	✓	✓								✓							Ш				$ \bot $	
Surface-to-Air Missile Test			✓	✓	✓		✓	✓		✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓			Ш					
ANTI-SUBMARINE WARFARE																																	
Anti-Submarine Warfare Torpedo Test (Aircraft)	✓			✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓	ш		Ш					
Anti-Submarine Warfare Tracking Test (Fixed-Wing)	✓			✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓	Ш		igsquare					
Anti-Submarine Warfare Tracking Test (Rotary-Wing)	✓			✓						✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓								
Kilo Dip Test	✓			✓						✓			✓								✓												
Sonobuoy Lot Acceptance Test	✓		✓	✓				✓		✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		✓								
ELECTRONIC WARFARE																																	
Chaff Test				✓						✓			✓	✓						✓	✓		✓	✓	✓	Ш		igsqcup				\Box	
Electronic Systems Test				✓						✓			✓	✓				✓			✓		✓	✓	✓	Ш	✓	✓	✓	✓		✓	✓
Flare Test				✓						✓			✓	✓						✓	✓		✓	✓	✓								

Table B-2: Stressors by Testing Activity (continued)

												Resoul			-		•				Phy	sical F	Resou	rces				Hum	an Re	esource	es		
										<u> </u>	gicai										Air			nts aı	nd	Culti	ural	Socio				c Health	<u></u>
		Acc	oustic	Stres	sors		_	osive	Energ	y Stre	ssors	-	ical D			and	_	lement	_	stion	Quality			Quali		Reso			sourc			Safety	
							Stre	ssors					Strike	Stres	sors		Stres	ssors	Stre.	ssors	Stressors		Stre	ssors		Stres	sors	St	ressor	rs	Str	essors	
Hawaii California Testing Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy Physical Interactions	rijasicui ilitei uttiviis
MINE WARFARE		1	Ī	1 /	T	 	T	T	T	1 /	1	ı	1 /	T	T			ı	ı	I				ī	ı	 			I	—	—	—	
Airborne Dipping Sonar Minehunting Test	✓			√						√			√								✓												_
Airborne Laser Mine Detection System Test				✓						✓			✓								✓						✓	✓	✓	✓	\rightarrow	√	
Airborne Mine Neutralization System Test			✓	✓			✓			✓		✓	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓								
Airborne Minehunting Test – Sonobuoy	✓			✓						✓			✓	✓	✓		✓	✓		✓	✓		✓		✓								
Mine Laying Test				✓						✓			✓	✓	✓						✓		✓		✓		✓	✓	✓	✓	\perp		
SURFACE WARFARE						•												•							•								
Air-to-Surface Bombing Test			✓	✓			✓			✓		✓	✓	✓					✓	✓	✓	✓	✓	✓	✓						\perp		
Air-to-Surface Gunnery Test			✓	✓	✓		✓			✓		✓	✓	✓					✓	✓	✓	✓	✓	✓	✓								
Air-to-Surface High-Energy Laser Test			✓	✓						✓	✓	✓	✓	✓						✓	✓				✓								
Air-to-Surface High-Power Microwave Test			✓	✓						✓	✓	✓	✓	✓						✓	✓				✓								
Air-to-Surface Laser Targeting Test				✓						✓			✓	✓						✓	✓		✓	✓	✓								
Air-to-Surface Missile Test			✓	✓	✓		✓			✓		✓	✓	✓				✓	✓	✓	✓	✓	\	✓	✓								
Long-Range Weapons Delivery Systems (Over-the-Horizon)/ Hypersonic Vehicle Test				✓	~		✓			✓			✓	✓					✓		✓	✓	✓	✓	✓								
Rocket Test			✓	✓	✓		✓			✓		✓	✓	✓					✓	✓	✓	✓	✓	✓	✓								
Subsurface-to-Surface Missile Test					✓		✓					✓		✓					✓		✓	✓	✓	✓	✓								
Surface-to-Surface Gunnery Test – Large-Caliber			✓		✓		✓			✓		✓		✓					✓	✓	✓	✓	✓	✓	✓								
Surface-to-Surface Gunnery Test – Medium-Caliber			✓		✓		✓			✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓								
Surface-to-Surface Gunnery Test – Small-Caliber			✓		✓					✓		✓		√					✓	✓	✓		✓	✓	✓								
Surface-to-Surface High-Energy Laser Test			✓	✓	✓					✓	✓	✓	✓	√				✓		✓	✓		✓	✓	✓								
Surface-to-Surface High-Power Microwave Test			✓	✓						✓	✓	✓		✓						✓	✓				✓								
Surface-to-Surface Missile Test			✓		✓		✓			✓		✓		✓					✓	✓	✓	✓	✓	√	✓								
OTHER TESTING ACTIVITIES	_	_		ı				<u>. </u>	l		_		_											l		<u> </u>		<u> </u>	<u>I</u>				
Acoustic and Oceanographic Research		I	✓	√		I				✓		✓	√								✓				✓		✓	✓	✓	✓	√	✓ ✓	7
Air Platform Shipboard Integration Test		1	√	✓		1				√	1	✓	✓								✓						✓	✓	✓	✓	十	√ ✓	7
Undersea Range System Test	✓	1	✓			1	1			√		✓		✓	✓						✓												

Table B-2: Stressors by Testing Activity (continued)

										Biol	logical	Resou	rces								Phy.	sical F	Resou	rces				Hum	an Re:	sourc	es		
							Ī.,									,		, ,			Air			nts an	nd	Cultu	ıral	Socio	econo	mic	Public	: Health	
		Aco	ustic	Stress	sors		Explo Stres		Energ	y Stre	essors	_	sical D Strike			ana	_	lement ssors	_	stion ssors	Quality	и	/ater	Qualit	y	Resou	ırce	Re	source	e	& 9	afety	
							Sires			_			Strike	Sires			30163	33013	3016		Stressors		Stres	ssors		Stress	sors	Sti	ressor	s	Str	essors	
Hawaii California Testing Activity	ar & Other Transducers	Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic	In-Air Electromagnetic Devices		Vessels & In-water Device	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	es & Cables	Decelerators/Parachutes/Nets	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy Physical Interactions	
NAVAL FACULTIES ENGINEEDING AND EVDEDITIONADY	Sonar	Pile			We	Air	Exp	Exp	1-11	1-4	Hig	Vessel	Airc	Mil	Sea	Pile	Wires	Dec	N N	Of the line of the	Crit	Exp	Me	Che	Oth	Exp	Phy	Acc	Airt	Phy	ร็	Phy	
NAVAL FACILITIES ENGINEERING AND EXPEDITIONARY W	/ARF	ARE C	ENTE	:R																													
UNMANNED SYSTEMS	l	l		l	l		ı							I		T I								I									_
Ocean Energy and Cable Systems Research OTHER TESTING ACTIVITIES			✓									✓			✓		√										√				✓		
	Π	I	./	1			1	I	l	Т	T	/	T	√	√		√			l	I	1			√	Т	√	I	Т	√	√		4
Undersea Range System Testing			∨						√		-	V		V ✓	V ✓		<u> </u>						√		∨ ✓		∨ ✓			∨ ✓	∨	✓	-
Underwater Search, Deployment, and Recovery NAVAL SEA SYSTEMS COMMAND										_	_			<u> </u>	<u> * </u>		•						•		<u> </u>		<u> </u>		_	<u> </u>	<u> </u>		4
ANTI-SUBMARINE WARFARE																																	
Anti-Submarine Warfare Mission Package Testing	√		√	√	✓		l			 ✓	T	✓	√	√	Ι		√	✓		√	√		√	✓	√		√	√	√	✓	√	√ ✓	1
At-Sea Sonar Testing	✓		√	✓					✓	√		✓	√	√	✓		✓	√		✓	√		√	√	√				1				┪
Pierside Sonar Testing	√		√							√					✓						√				✓			✓	√		√	√ ✓	1
Surface Ship Sonar Testing/Maintenance	✓		✓							√		✓									✓						✓	√	√	√	√	√ ✓	
Torpedo (Explosive) Testing	✓		✓	✓			✓			✓		✓	✓	✓	√		✓	✓	✓	✓	✓	√	✓	✓	✓								-
Torpedo (Non-Explosive) Testing	✓		√	√						✓		✓	√	✓	✓		✓	✓		✓	✓		✓	✓	✓		✓	✓	√	✓	✓	√ ✓	1
ELECTRONIC WARFARE			<u> </u>																		<u> </u>												
Radar and Other System Testing			✓	✓	√			✓	✓	√	√	✓	✓	✓	✓		✓	✓	✓	✓	✓	√	✓	✓	✓		✓	✓	✓	✓	✓	√	٦
MINE WARFARE								<u> </u>	<u> </u>											<u> </u>	1												
Mine Countermeasure and Neutralization Testing			✓	✓			✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√	٦
Mine Countermeasure Mission Package Testing	✓		✓	✓			✓		✓	✓		✓	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√ ✓	
Mine Detection and Classification Testing	✓		✓	✓					✓	✓		✓	✓	✓	✓		✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	√ ✓	
SURFACE WARFARE									-																								
Gun Testing – Large Caliber	✓		✓	✓	✓		✓			✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓]
Gun Testing – Medium Caliber			✓	✓	✓			✓		✓		✓	✓	✓					✓		✓	✓	√		✓								
Gun Testing – Small Caliber			✓		✓					✓		✓		✓					✓	✓	✓		√	✓	✓								
Missile and Rocket Testing			✓		✓		✓	✓		✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓								
UNMANNED SYSTEMS																																	
Underwater Search, Deployment, and Recovery			✓	✓					✓	✓		✓	✓	✓							✓						✓	✓	✓	✓		√	1

Table B-2: Stressors by Testing Activity (continued)

										Biolo	ogical	Resour	ces								Phys	sical R	Resou	rces				Hum	nan R	esourc	es	
								•						·			5			-4!	Air			nts aı	nd	Cult	ural	Socio	oecon	omic	Publi	ic Health
		Acc	oustic	Stress	sors			osive ssors	Energ	y Stre	ssors	_		sturbe Stres		ana	Entang Stres		_	stion ssors	Quality	W	ater (Quali	ty	Reso	urce	Re	esour	ce	& :	Safety
							3070	1		1			T	J., C.3.			36763				Stressors		Stres	ssors		Stres	sors	St	resso	rs	Str	essors
Hawaii California Testing Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes/Nets	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy Physical Interactions
Unmanned Surface Vehicle System Testing			√			,				√		✓		√							✓				✓		√	✓	✓	√		√ √
Unmanned Underwater Vehicle Testing	✓		√							✓		✓		✓	✓		✓			✓	✓		✓	✓	√		✓	✓	✓	✓	✓	√ ✓
VESSEL EVALUATION		_	<u> </u>				ı			•																					ı	
Air Defense Testing			✓	✓	✓			✓		✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓							
In-Port Maintenance Testing	✓		✓							✓		✓									✓						✓	✓	✓	✓	✓	√ √
Propulsion Testing			✓		✓					✓		✓			✓						✓						✓	✓	✓	✓		√ √
Signature Analysis Operations	✓		✓						✓	✓		✓		✓	✓		✓				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Small Ship Shock Trial			✓	✓			✓			✓		✓	✓								✓	✓	✓	✓	✓							
Submarine Sea Trials – Weapons System Testing	✓		✓							✓		✓		✓	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Surface Warfare Testing	✓		✓	✓	✓		✓	✓		✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓							
Undersea Warfare Testing	✓		✓	✓	✓			✓		✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Vessel Signature Evaluation			✓						✓			✓									✓						✓	✓	✓	✓		✓ ✓
OTHER TESTING ACTIVITIES																																
Acoustic and Oceanographic Research	✓		✓							✓		✓		✓							✓						✓	✓	✓	✓	✓	✓ ✓
Countermeasure Testing	✓		✓	✓					✓	✓		✓	✓	✓			✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓
Insertion/Extraction	✓		✓							✓		✓		✓			✓	✓			✓		✓		✓		✓	✓	✓	✓	✓	√ √
Non-Acoustic Component Testing			✓	✓						✓		✓	✓								✓						✓	✓	✓	✓	✓	✓ ✓
Semi-Stationary Equipment Testing	✓						✓			✓				✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ✓
Simulant Testing			✓	✓						✓		✓	✓								✓											
NAVAL INFORMATION WARFARE SYSTEMS COMMAND																																
ACOUSTIC AND OCEANOGRAPHIC SCIENCE AND TECHNO						•																		•	•							
Acoustic, Oceanographic, and Energy Research	✓		✓							✓		✓			✓						✓						✓	✓	✓	✓	✓	√ √
OTHER TESTING ACTIVITIES					1																ı			ı						1		
Communications	✓		✓	✓						✓	<u> </u>	✓	✓		✓		✓				✓						✓	✓	✓	✓	✓	✓ ✓
Intelligence, Surveillance, Reconnaissance	✓		✓	✓	✓	✓				✓		✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	√ √
Vehicle Testing	✓		✓							✓		✓	✓	✓	✓						✓		✓		✓		✓	✓	✓	✓	✓	✓ ✓

Table B-2: Stressors by Testing Activity (continued)

										Biolo	gical	Resou	rces								Phy	sical F	Resou	rces				Hum	an Re	sourc	es		
		Aco	oustic	Stres	sors		Explo	sive	Energ	y Stres	sors	-		Disturb e Stres			_	glement essors	_	estion essors	Air Quality Stressors		/ater	nts an Qualit		Res	tural ource essors		econo esouro ressoi	:e	& .	ic Hea Safety ressor	y
Hawaii California Testing Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device	Aircraft & Aerial Target Strike	ary Expende	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
OFFICE OF NAVAL RESEARCH																																	
ACOUSTIC AND OCEANOGRAPHIC SCIENCE AND TECHNO	LOGY	7																															
Acoustic and Oceanographic Research	✓		✓		✓	✓	✓			✓		✓		✓	✓				✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Large Displacement Unmanned Underwater Vehicle Testing														✓							✓						✓	✓		✓			✓
Long-Range Acoustic Communications	✓		✓									✓			✓						✓												
Mine Countermeasure Technology Research	✓		✓									✓									✓						✓	✓	✓	✓	✓	✓	✓

Table B-3: Stressors by Modernization and Sustainment of Ranges Action

										Biolo	gical	Resour	ces								Phy.	sical	Resou	rces				Hum	nan Re	sourc	es	
		Ace	oustic	Stres	sors		Explo Stres	osive ssors	Energ	y Stre:	ssors	-		Disturb e Stre:		and	_	lement ssors		estion essors	Air Quality Stressors		edime Vater Stre			Resc	tural ource ssors	Re	econo esource ressor	e	& .	ic Health Safety ressors
Hawaii California Testing Activity	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	E	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy Physical Interactions
AIRSPACE										-			<u> </u>		<u> </u>																	
Special Use Airspace Modification				✓									✓																			
SEASPACE																																
Southern California Offshore Anti-Submarine Warfare Range Modernization			~						✓			✓			✓		✓				✓			✓			✓	✓		✓	✓	✓
Shallow Water Training Ranges Installation			✓						✓			✓			✓		✓				✓			✓			✓	✓		✓	✓	✓
Sustainment of Undersea Ranges			✓									✓			✓		✓				✓			✓				✓		✓		✓
Deployment of Seafloor Cables and Instrumentation			✓						✓			✓			✓		✓				✓						✓	✓		✓	✓	✓
Installation and Maintenance of Mine Warfare and Other Training Areas			~									1			~		1				✓						✓	✓		✓	✓	✓
Installation and Maintenance of Underwater Platforms			✓									✓			✓						✓						✓	✓		✓		✓

Table B-4: Stressors by Resource

											Biolog	ical Re.	source	?S								P	hysica	Resou	ırces				Н	uman F	Resour	ces		
			Ad	oustic	Stress	ors		_	osive ssors	Ener	gy Stre	ssors	Pl	nysical Stril	Disturi ke Stre		and		glement	_	stion ssors	Air Quality Stressors			and Wo Stresso		Resc	tural ource ssors	R	ioecono Resouro Stresso	ce		lic Heal ety Stre	
	Stressors vs. Resources	Sonar & Other Transducers	Pile Driving	Vessel Noise	Aircraft Noise	Weapons Noise	Air Guns	Explosions in Water	Explosions in Air	In-Water Electromagnetic Devices	In-Air Electromagnetic Devices	High-Energy Lasers	Vessels & In-water Device Strike	Aircraft & Aerial Target Strike	Military Expended Material	Seafloor Devices	Pile Driving	Wires & Cables	Decelerators/Parachutes	Military Expended Materials – Munitions	Military Expended Materials – Other than Munitions	Criteria Air Pollutants	Explosives	Metals	Chemicals (Not Explosives)	Other Materials	Explosives	Physical Disturbance & Strike	Accessibility	Airborne Acoustics	Physical Disturbance & Strike	Underwater Energy	In-Air Energy	Physical Interactions
cal	Air Quality								✓												✓	✓												
Physical	Sediments and Water Quality							✓															✓	✓	✓	1								
	Vegetation							✓					✓		✓	✓	✓						✓	✓	✓	✓								
	Invertebrates	1	✓				✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓								
<u></u>	Habitats							✓					✓		✓	✓	✓																	
Biological	Fishes	1	✓	✓		✓	✓	✓		✓		✓	✓		✓	✓		✓		✓			✓	✓	✓	✓								
Bic	Marine Mammals	1	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓		✓	✓	✓			✓	✓	✓	1								
	Reptiles	1	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓		✓	✓	✓			✓	✓	✓	✓								
	Birds	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓					✓	✓	✓												
	Cultural Resources				✓			✓							✓	✓											✓	✓						
Human	Socioeconomic Resources and Environmental Justice	✓		✓	✓	✓	✓	✓					✓	✓	✓			~					✓	✓	✓	✓			√	✓	✓			
	Public Health and Safety	✓				✓	✓	✓				✓	✓	✓	1	✓																✓	✓	✓