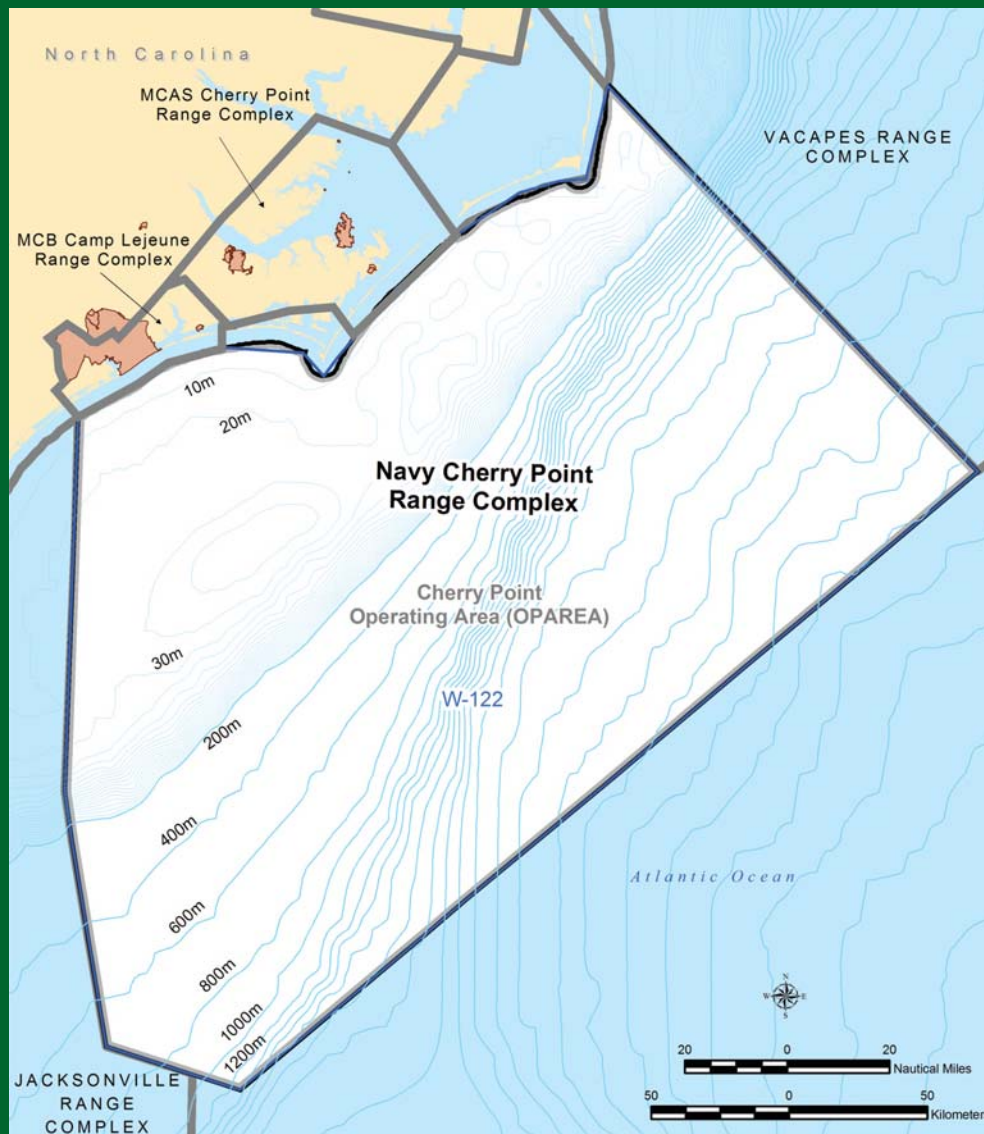


# Navy Cherry Point Range Complex Final Environmental Impact Statement/ Overseas Environmental Impact Statement (EIS/OEIS) Volume 1



Prepared by:  
**United States Fleet Forces**  
April 2009

# NAVY CHERRY POINT RANGE COMPLEX FINAL ENVIRONMENTAL IMPACT STATEMENT/ OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

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*Abstract:*

The Department of the Navy has prepared this Final Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) to assess the potential environmental impacts over a 10-year planning horizon associated with Navy Atlantic Fleet training, research, development, testing, and evaluation activities, and associated range capabilities enhancements (including infrastructure improvements) in the Navy Cherry Point Range Complex. The EIS/OEIS Study Area includes the Cherry Point Operating Area and Warning Areas. The potential effects to physical, biological, and man-made environments from the testing and training alternatives were studied to determine how the proposed action could affect these resources. The National Marine Fisheries Service is a Cooperating Agency for this EIS/OEIS.

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## ACRONYMS AND ABBREVIATIONS

A-A	Air-to-Air	ARTCC	Air Route Traffic Control Center
AAMEX	Air-to-Air Missile Exercise	A-S	Air-to-Surface
AAV	Amphibious Assault vehicle	A-SEL	A-weighted SEL
ACHP	Advisory Council on Historic Preservation	ASMFC	Atlantic States Marine Fisheries Commission
ACM	Air Combat Maneuvering	ASROC	Rocket-Assisted Anti-Submarine Torpedo
ADC	Acoustic Device Countermeasure	ASRT	Air Support Radar Team
AEAU	Alternative Energy and Alternate Use	ASTM	American Society for Testing and Materials
AEGIS	Airborne Early Warning/Ground Environment Integration Segment	ASW	Anti-Submarine Warfare
AFAST	Atlantic Fleet Active Sonar Training	ATC	Air Traffic Control
AFECC	Atlantic Fleet Exercise Coordination Center	AUE	Association of Underwater Explorers
AIC	Air Intercept Control	AUTEC	Atlantic Undersea Test and Evaluation
AICUZ	Air Installations Compatible Use Zone	AW	Air Warfare
AIM	Air Intercept Missile	AWOIS	Automated Wreck and Obstruction Information System
AIWW	Atlantic Intercoastal Waterway	BA	Biological Assessment
ALMDS	Airborne Laser Mine Detection System	BAMS	Broad Area Maritime Surveillance
Al <sub>2</sub> O <sub>3</sub>	Aluminum Oxide	BDA	Battle Damage Assessment
AMCM	Airborne Mine Countermeasure	BDU	Bomb Dummy Unit
AMNS	Airborne Mine Neutralization System	BE	Biological Evaluation
AMRAAM	Advanced Medium-Range Air- to-Air Missile	BFM	Basic Fighter Maneuvers
AMW	Amphibious Warfare	BMP	Best Management Practice
APNEP	Albemarle-Pamlico National Estuary Program	BO	Biological Opinion
AQCR	Air Quality Control Region	BOMBEX	Bombing Exercise
AQM	Air-Launched Drone Missile Target	BQM	Air- or Surface-Launched Drone Missile Target
APE	Area of Potential Effect	BRAC	Base Realignment and Closure
AR	Atlantic Route	BRS	Behavioral Response Study
ARPA	Archaeological Resources Protection Act	BT	Bombing Target
		BUD	Basic Underwater Demolition
		C	Centigrade or Celsius
		C2W	Command and Control Warfare
		CAA	Clean Air Act

CAMA	Coastal Area Management Act	COMAR	Code of Maryland Regulations
CAS	Commercial Air Services (Navy); Close Air Support (USMC)	COMNAVREG SE	Commander, Navy Region Southeast
CATEX	Categorical Exclusion	COMPTUEX	Composite Training Unit Exercise
CATM-9	Captive Carry Training Missile	CP&L	Community Plans and Liaison
CBFEAP	Chesapeake Bay Fisheries Ecosystem Advisory Panel	CRC	Coastal Resources Commission
CBP	Chesapeake Bay Program	CSAR	Combat Search and Rescue
CEQ	Council on Environmental Quality	CSG	Carrier Strike Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	CVN	Nuclear Aircraft Carrier
CFFC	Commander, United States Navy Fleet Forces Command	CVOA	Carrier Operating Area
CFMTR	Canadian Forces Maritime Experimental and Test Ranges	CVW	Carrier Air Wing
CFR	Code of Federal Regulations	CWA	Clean Water Act
CH <sub>4</sub>	Methane	CZMA	Coastal Zone Management Act
CHAFFEX	Chaff Exercise	D-Tags	Digital Acoustic Recording Tags
CHASN	Charleston	DAWM	Division of Air and Waste Management
CHPT	Cherry Point	dba	decibel (A-weighted)
CHRIMP	Consolidated Hazardous Materials Reutilization and Inventory Management Program	dd	distance doubled
CINCLANTFLT	Commander, in Chief, U.S. Atlantic Fleet	DDG	Guided Missile Destroyer
CIWS	Close-In Weapon System	DENR	Department of Environment and Natural Resources (NC)
CNA	Center for Naval Analysis	DEQ	Department of Environmental Quality
CNIC	Commander Naval Installations Command	DIN	dissolved inorganic nitrogen
CNO	Chief of Naval Operations	DIP	dissolved inorganic phosphorus
CO	Commanding Officer or Carbon Monoxide	DLQ	Deck Landing Qualifications
CO <sub>2</sub>	Carbon Dioxide	DMA	Dynamic Management Area
		DNL	Day-Night Average Sound Level
		DNREC	Delaware Department of Natural Resources and Environmental Control
		DO	Dissolved oxygen
		DoD	Department of Defense
		DoN	Department of the Navy
		DTE	Detect-to-Engage
		DVD	Digital Versatile Disk
		DWEL	Drinking Water Equivalent Level

DWQ	Division of Water Quality (NC)	FIP	Federal Implementation Plan
EA	Environmental Assessment	FIREX	Firing Exercise
EC	Electronic Combat	FL	Flight Level
EEZ	Exclusive Economic Zone	FMP	Fishery Management Plan
EFD	Energy Flux Density	FONSI	Finding of No Significant Impact
EFH	Essential Fish Habitat	fps	feet per second
EFHA	Essential Fish Habitat Assessment	FRP	Fleet Response Plan
EFV	Expeditionary Fighting Vehicles	FRS	Fleet Replacement Squadron
EGMTTA	Eastern Gulf of Mexico Testing and Training Areas	F-SEL	Flat weighted SEL
EIS	Environmental Impact Statement	Ft	Feet
EMATT	Expendable Mobile ASW Training Target	FR	Federal Register
EO	Executive Order	FRP	Fleet Response Plan
EOD	Explosive ordnance disposal	FRTTP	Fleet Response Training Plan
EPCRA	Emergency Planning and Community Right-to-Know Act	FWPCA	Federal Water Pollution Control Act
ESA	Endangered Species Act	FWS	Future Water Supply
ESG	Expeditionary Strike Group	FY	Fiscal Year
ESGEX	Expeditionary Strike Group Exercise	GMFMC	Gulf of Mexico Fishery Management Council
EW	Electronic Warfare	GOMEX	Gulf of Mexico
EXTORP	Exercise Torpedo	GPS	Global Positioning System
F	Fahrenheit	GTF	Grow the Force
FAA	Federal Aviation Administration	GTFP	Green Turtle
FAC	Forward Air Controller	GUNEX	Fibropapillomatosis
FACSFAC	Fleet Area Control and Surveillance Facility	H <sub>2</sub>	Gun Exercise
FCLP	Field Carrier Landing Practice	H <sub>2</sub> O	Hydrogen
FCTC	Fleet Combat Training Center	HAB	Water
FEIS	Final Environmental Impact Statement	HAPC	harmful algal blooms
FERC	Federal Energy Regulatory Commission	HARMEX	Habitat Areas of Particular Concern
FFG	Guided Missile Frigate	HARPS	High Speed Anti-Radiation Missile Exercise
		HAZMINCEN	High Frequency Acoustic Recording Packages
		HCN	Hazardous Material Minimization Center
		HE	hydrogen cyanide
		HELO	High Explosive Helicopter
		HITS	Historical Temporal Shipping
		HM	Hazardous Material
		HMX	Octogen (high Melting Explosive)
		HQW	High Quality Waters

HSMT	High-Speed Maneuverable Target	KIAS	Knots Indicated Air Speed
HSMST	High-Speed Maneuverable Surface Target	LAR	Light Amphibious Reconnaissance vehicle
HSO <sub>3</sub>	Hydrogen Sulfite (Bisulfite)	LATR	Large Area Tracking Range
HW	Hazardous Waste	LAV	Light Armored vehicle
Hz	Hertz	Lb.	Pound
IBA	Important Bird Area	LCAC	Landing Craft Air Cushion
ICAO	International Civil Aviation Authority	LCS	Littoral Combat Ship
ICMP	Integrated Comprehensive Monitoring Program	LCU	Landing Craft Utility
IEER	Improved Extended Echo Ranging	L <sub>dn</sub>	Day-Night Average Sound Level (formula version)
IEF	In Ex Fish	L <sub>dnmr</sub>	Onset-rate adjusted monthly day-night average sound level
IFH	Improved Flex Hose	L <sub>eq</sub>	1 second averaged equivalent sound level
IFR	Instrument Flight Rules	LFA	Low Frequency Active
IMPASS	Integrated Maritime Portable Acoustic Scoring and Simulator System	LHA	Amphibious Assault Ship, general purpose
IOC	Initial Operational Capability	LHD	Amphibious Assault Ship, multi-purpose
IP	Implementation Plan	LiBr	Lithium Bromide
IRIS	Integrated Risk Information System	LIDAR	Light Detection and Ranging
ISE	Independent Steaming Exercise	LiSO <sub>2</sub>	Lithium sulfur dioxide
ISR	Intelligence, Surveillance and Reconnaissance	L <sub>max</sub>	Maximum sound pressure level within a measuring period
ISTT	Improved Surface Tow Target	L <sub>min</sub>	Lowest sound pressure level within a measuring period
ITS	Incidental Take Statement	LMRS	Long-Term Mine Reconnaissance System
IUSS	Integrated Undersea Surveillance System	LNG	Liquid Natural Gas
IWC	International Whaling Commission	LOA	Letter of Authorization
JAX	Jacksonville	LPD	Amphibious Transport Dock
JFCOM	Joint Forces Command	LSD	Dock Landing Ship
JNTC	Joint National Training Capability	LW	Sound Power Level
JSF	Joint Strike Fighter	M&S	Modeling and Simulation
JTFEX	Joint Task Force Exercise	M3R	Marine Mammal Monitoring on Navy Ranges
kg	kilogram	MAB	Mid-Atlantic Bight
kHz	kilohertz	MAEWR	Mid-Atlantic Electronic Warfare Range
		MAFMC	Mid-Atlantic Fishery Management Council

MAGTF	Marine Air Ground Task Force	MOUT	Military Operations on Urban Terrain
MARPOL	International Convention for the Prevention of Pollution from Ships	MPCD	Marine Pollution Control Device
MATS	Mid-Atlantic Tursiops Surveys	mph	miles per hour
MAUS	Mid-Atlantic United States	MRA	Marine Resource Assessment
MBTA	Migratory Bird Treaty Act	MS	Maritime Security
MCALF	Marine Corps Auxiliary Landing Field	MSAT	Marine Species Awareness Training
MCAS	Marine Corps Air Station	MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MCB	Marine Corps Base	MSL	Mean Sea Level
MCM	Mine Countermeasures	MSR	Mobile Sea Range
MCOLF	Marine Corps Outlying Field	MU	Management Unit
MDE	Maryland Department of the Environment	N	Newton
MEM	Military Expended Material	N <sub>2</sub>	Nitrogen
MEMC	Military Expended Material Constituent	NAAQS	National Ambient Air Quality Standards
MEU	Marine Expeditionary Unit	NAB	Naval Amphibious Base
MFA	Mid-frequency active	NALF	Naval Auxiliary Landing Field
MFAS	multi-function active sensor	NAMS	National Air Monitoring Site
MIB	Mid-Atlantic Bight	NAO	North Atlantic Oscillation
µg/L	micrograms per liter	NARWC	North Atlantic Right Whale Consortium
µPa	micropascals	NAS	Naval Air Station
mg/L	milligrams per liter	NASA	National Aeronautics and Space Administration
MINEX	Mining Exercise	NASOCEANAINST	NAS Oceana Instruction
MIO	Maritime Intercept Operations	NAVAIR	Naval Air Systems Command
MISSILEX	Missile Exercise	NAVFAC	Naval Facilities Engineering Command
MIW	Mine Warfare	NAWQC	National Ambient Water Quality Criteria
mm	Millimeter	NC	North Carolina
MMA	Mutli-Mission Maritime Aircraft	NCA	National Coastal Assessment
MMC	Marine Mammal Commission	NCAC	North Carolina Administrative Code
MMPA	Marine Mammal Protection Act	NC DENR	North Carolina Department of Environment and Natural Resources
MMS	Minerals Management Service	NCGS	North Carolina General Statute
MOA	Military Operating Area	NDAA	National Defense Authorization Act

NDCBR	Navy Dare County Bombing Range	NSWC	Naval Surface Warfare Center
NDZ	No Discharge Zone	NTTL	Navy Tactical Task List
NEFMC	New England Fishery Management Council	NWS	Naval Weapons Station
NEP	National Estuary Program	OASIS	Organic and Surface Influence Sweep
NEPA	National Environmental Policy Act	OB/OD	Open Burn/Open Detonation
NEPM	Non-Explosive Practice Munitions	OCE	Officer Conducting the Exercise
NERR	National Estuarine Research Reserve	OCM	Oil Content Monitor
NEUS	Northeast United States	OCSLA	Outer Continental Shelf Lands Act
NEW	Net Explosive Weight	ODD	Officer of the Deck
NH <sub>3</sub>	Ammonia	OEA	Overseas Environmental Assessment
NHPA	National Historic Preservation Act	OEIS	Overseas Environmental Impact Statement
NIOSH	National Institute for Occupational Safety and Health	OMCM	Organic Mine Countermeasures
nm	Nautical Miles	OMP	Office of Marine Programs
nm <sup>2</sup>	Square Nautical Miles	OOD	Officer of the Deck
NMFS	National Marine Fisheries Service	OPA	Oil and Pollution Act
NMMA	National Marine Manufacturers Association	OPAREA	Operating Area
NO <sub>x</sub>	Nitrogen Oxide	OPFOR	Opposition Force
NOA	Notice of Availability	OPNAVINST	Chief of Naval Operations Instruction
NOAA	National Oceanic and Atmospheric Agency	OPS	Operations
NODE	Navy OPAREA Density Estimate	ORRV	Off road recreational vehicle
NOI	Notice of Intent	ORW	Outstanding Resource Waters
NOTAM	Notice-to-Airmen	OTC	Officer in Tactical Command
NOTMAR	Notice-to-Mariners	P2	Pollution Prevention
NPDES	National Pollution Discharge Elimination System	Pa	Pascals
NPS	National Park Service	PACFIRE	Pre-Action Calibration Firing
NRC	National Research Council	PAH	polycyclic aromatic hydrocarbon
NRHP	National Register of Historic Places	PARS	Port Access Route Study
NRIS	National Register Information System	PbCl <sub>2</sub>	Lead Chloride
NSFS	Naval Surface Fire Support	PbCO <sub>3</sub>	Lead Carbonate
NSW	Naval Special Warfare Or Nutrient Sensitive Waters	PbOH <sub>2</sub>	Lead Hydroxide
		PCB	polychlorinated biphenyls
		PBR	Potential Biological Removal
		PERSTEMPO	Personnel Tempo of Operations

PL	Public Law	RF	radio frequency
PM	Particulate matter	RFF	Request for Forces
PMAR	Primary Mission Areas	RFMSS	Range Facility Management Support System
pna	primary nursery areas		
POC	Point of Contact	RHIB	Rigid Hull Inflatable Boat
POL	petroleum, oils, and lubricants	rms	root mean squared
ppb	parts per billion	ROD	Record of Decision
ppm	parts per million		
ppt	parts per thousand	RONA	Record of Non-Applicability
psf	pounds per square foot	RONEX	Squadron Exercise
psi	pounds per square inch	RSG	Range Sustainability Group
psu	practical salinity units	RSO	Range Safety Officer
PTC	Pilot Training Center	S-A	Surface-to-Air
PTP	Pre-deployment Training Program	SAB	South-Atlantic Bight
PTS	Permanent Threshold Shift	SAFMC	South Atlantic Fishery Management Council
PVC	polyvinyl chloride	SAR	Stock Assessment
PWC	Personal Watercraft		Report or Search and Rescue
PWL	Sound Power Level	SARA	Superfund Amendments and Reauthorization Act
R&D	Research and Development	SAV	Submerged Aquatic Vegetation
RAICUZ	Range Air Installations	SCP	Spill Contingency Plan
RAM-D	Compatible Use Zone	SDWA	Safe Drinking Water Act
	Reliability, Availability, Maintainability, and Durability	SEAC	Submarine Exercise Area Coordinator
RAMICS	Rapid Airborne Mine Clearance System	SEAD	Suppression of Enemy Air Defenses
RCD	Required Capabilities Document	SEARCH	Southeastern Archaeological Research, Inc.
RCDO	Range Control Duty Officer	SEIS	Supplemental Environmental Impact Statement
RCMP	Range Complex Management Plan		
RCRA	Resource Conservation and Recovery Act	SEL	Sound Exposure Level
	Research, Development, Test and Evaluation	SEPTAR	Seaborne Powered Target
RDT&E		SESEF	Shipboard Electronic Systems Evaluation Facility
RDX	Cyclotrimethylene-trinitramine (Royal Demolition Explosive)	SEUS	Southeastern United States
REC	Regional Environmental Coordinator	SFH	Strong Flex Hose
		SHPO	State Historic Preservation Office
REXTORP	recoverable exercise torpedo	SINKEX	Sinking Exercise
		SiO <sub>2</sub>	Silicon Dioxide

SIP	State Implementation Plan	TEU	Twenty-Foot Equivalent Units
SLA	Submerged Lands Act	TL	Transmission Loss
SLAMS	State and Local Air Monitoring Site	TMDL	total maximum daily load
SM	Standard Missile	TNT	trinitrotoluene
SMA	Seasonal Management Area	TOW	Tube-Launched, Optically Tracked Wire-Guided
SMCA	Sunken Military Craft Act	TR	Trout waters
SME	Subject Matter Expert	TRACKEX	Tracking Exercise
SO <sub>2</sub>	Sulfur Dioxide	TRES	Threat Radar Emitter System
SOP	Standard Operating Procedure	TSP	total suspended particulates
SPL	Sound Pressure Level	TSPI	Time, Space and Position Information
S-S	Surface-to-Surface	TTS	Temporary Threshold Shift
SSG	Surface Strike Group	UAV	Unmanned Aerial Vehicle
SSN	Nuclear Submarine	UCAV	Unmanned Combat Air Vehicle
SST	Sea Surface Temperature	UJTL	Universal Joint Task List
STOVL	Short Take-off/Vertical Landing	ULT	Unit Level Training
STW	Strike Warfare	UNDET	Underwater Detonation
SUA	Special Use Airspace	UNDS	Uniform National Discharge Standards
SUBOA	Submarine Operating Area	U.S.	United States
SUBOPAATH	Submarine Operating Authority	USACOE	United States Army Corp of Engineers
SURTASS	Surveillance Towed Array Sensor System	USAF	United States Air Force
SUW	Surface Warfare	U.S.C.	United States Code
SW	Swamp waters	USCB	United States Census Bureau
SWAP	Severe Weather Avoidance Plan	USCG	United States Coast Guard
SWSS	Sperm Whale Seismic Study	USCOP	U.S. Commission on Ocean Policy
T&E	Testing & Evaluation	USEPA	U.S. Environmental Protection Agency
T&R	Training & Readiness	USFF	United States Fleet Forces
TACAN	Tactical Air Navigation	USFWS	United States Fish and Wildlife Service
TACTS	Tactical Air Combat Training System	UST	underground storage tank
TALD	Tactical Air-Launched Decoy	USVI	U.S. Virgin Islands
TAMU	Texas A&M University	USWTR	Undersea Warfare Training Range Unique Wetland
TAP	Tactical Training Theater Assessment and Planning	VACAPES	Virginia Capes
TCTS	Tactical Combat Training System	VAST	Virtual At-Sea Training
TDS	Total Dissolved Solids		
TED	Turtle-Excluder Device		

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VBSS	Visit, Board, Search, and Seizure	WMA	Water Management Administration
VEMS	Versatile Exercise Mine System	WFF WQIP	Wallops Flight Facility Water Quality Infrastructure Program
VFR	Visual Flight Rules		
VIMS	Virginia Institute of Marine Science	WQMIRA	Water Quality Monitoring, Information, and Restoration Act
VLA	vertical launch anti- submarine rocket		
VMRC	Virginia Marine Resource Commission	WQS	Water Quality Standards
VOC	Volatile Organic Compound	WW II XBT	World War II expendable bathythermograph
V/STOL	Vertical/Short Take- Off and Landing	XO	Executive Officer
W-	Warning Area		