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STAFF REPORT: REGULAR CALENDAR

Consistency Determination No.: CD-0003-20

Federal Agency: U.S. Navy

Location: Point Mugu Sea Range, 36,000 square mile area offshore of southern California (Exhibit 1).

Project Description: Continuation and expansion of military readiness training and testing activities on the Point Mugu Sea Range and portions of San Nicolas Island, Naval Base Ventura County (NBVC) Point Mugu and NBVC Port Hueneme.

Staff Recommendation: Concurrence

SUMMARY OF STAFF RECOMMENDATION

The Navy has submitted a consistency determination for testing and training activities conducted by the Naval Air Warfare Center Weapons Division on the Point Mugu Sea Range (Sea Range) offshore of southern California. The proposed activities include continuation of existing historic levels for some testing and training activities and expansion from current levels for other activities. The Sea Range is a 36,000 square mile area of ocean and controlled airspace, roughly 200 nautical miles long and extending approximately 180 nautical miles offshore and includes San Nicolas Island and portions of the northern Channel Islands. The purpose of the proposed activities is to allow for continued testing and training "in support of military readiness and

Department of Defense (DoD) mission requirements as required by Title 10 to provide combat ready forces."

Most of the proposed activities are within the range and scope of historic Navy activities conducted on the Sea Range and previously reviewed by the Commission (most comprehensively in its 2001 concurrence with the Navy's consistency determination (CD-002-01)). In addition to proposing continuation of these activities, the Navy is also proposing to increase flight and vessel operations above historic levels and to increase the use of ordnance and surface and aerial targets.

The primary coastal resource concerns raised by the proposed project are potential effects to marine mammals found throughout the Sea Range and cultural and tribal resources on San Nicolas Island. Effects to marine mammals include the potential for collisions between Navy vessels and large whales ("ship strikes") and the proposed use of explosives (bombs, missiles, and other explosive munitions) at or immediately below the ocean surface within the Sea Range. To address these concerns, the Navy proposes to continue its implementation of previously established adverse impact avoidance, minimization and mitigation measures. For example, the Navy would continue to monitor "mitigation zones" around surface targets and seal and sea lion haul-outs and rookeries on San Nicolas Island, provide seasonal marine mammal awareness notifications to vessel operators and event managers, operate vessels and boats at the slowest necessary speeds, and use vessel and aircraft based observers and lookouts. Further, the Navy would focus training and testing activities involving the use of explosives within the open ocean portions of the Sea Range, away from shoreward areas of high marine mammal use and density including the waters of the Santa Barbara Channel, Channel Islands National Park, the Channel Islands National Marine Sanctuary and Biologically Important Areas for harbor porpoises, blue, gray and humpback whales established by the National Marine Fisheries Service.

The Navy has also committed to increase transparency, information sharing and engagement with the Commission by providing annual reports noting if any training and testing activities involving the use of explosives or gunnery exercises were carried out within Biologically Important Areas for marine mammals and sharing copies of any ship strike incident reports submitted to the National Marine Fisheries Service.

In addition to impacts to marine mammals, the Navy's activities could affect potential cultural and tribal resources on San Nicholas Island. The Pechanga Band and Rincon Band of Luiseño Indians have identified the potential for San Nicholas Island to be classified as a Traditional Cultural Property encompassing several known individual sites on the Island and contributing to an overall archaeological district. The Navy is in active consultation with both affected Tribes and has agreed to conduct ethnographic and archeological district studies called for in previous consultations with the affected Tribes and to continue to implement the Integrated Cultural Resource Management Plan for the island that contains guidance for complying with the National Historic Preservation Act and Native American Graves Protection and Repatriation Act, including standard operating procedures for the inadvertent discovery of cultural

resources. The Navy has also committed to providing the Commission with the completed studies within two years with the understanding that if the studies identify new cultural and tribal resources protected under the Coastal Act that are subject to spillover effects from the Navy's activities, the Commission may choose to exercise its ability to re-open this Consistency Determination to assess whether the Navy's activities remain consistent to the extent practicable with the Coastal Act.

Even with these important commitments in place, the Navy falls short of fulfilling several requests by Commission staff and environmental organizations for additional marine protection and monitoring measures. The Navy maintains that it has no evidence of harm to marine mammals or other marine organisms from its activities, and that further protective measures are therefore not warranted. Based on available information, staff believes that such additional protective measures could be beneficial but are not necessary to achieve Coastal Act consistency. However, the Commission will continue to review all available information regarding effects to marine wildlife from Navy activities within the Sea Range and will reserve the right to re-open this Consistency Determination if new information on effects becomes available. Thus, based on available information and incorporating the Navy's stated commitments and the continued implementation of avoidance, minimization and mitigation measures, the project is consistent with the cultural resources, marine resources and water quality policies (Sections 30244, 30230 and 30231) of the Coastal Act. As proposed, the project is also consistent with the commercial and recreational fishing policies (Sections 30234 and 30234.5) and coastal access and recreation policies (Sections 30210, 30211, 30212, 30213 and 30220) of the Coastal Act.

The staff recommends that the Commission concur with the Navy's consistency determination CD-0003-20. The motion and resolution are on Page 5 of this report. The standard of review for this consistency determination is the Chapter 3 policies of the Coastal Act.

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Exhibit 2 – Expanded Project Description

Exhibit 3 - Predicted Marine Mammal Effects per Year from Explosives

Exhibit 4 – Biologically Important Areas within Point Mugu Sea Range

Exhibit 5 - November 4, 2020 letter to Commission staff from the Natural Resources Defense Council

I. FEDERAL AGENCY'S CONSISTENCY DETERMINATION

Based on the review of the Proposed Action's compliance with the Coastal Zone Management Act (CZMA), the Navy has determined that the Proposed Action is consistent to the maximum extent practicable with the California Coastal Management Program, pursuant to the requirements of the CZMA.

II. MOTION AND RESOLUTION

Motion:

I move that the Commission concur with consistency determination CD-0003-20 that the project described therein is fully consistent, and therefore consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

Staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution:

The Commission hereby **concurs** with consistency determination CD-0003-20 by the U.S. Navy, on the grounds that the project described therein is fully consistent, and therefore consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program.

III. FINDINGS AND DECLARATIONS

A. Project Description and Background

The U.S. Navy (Navy) submitted a consistency determination seeking the Commission's concurrence with a program that combines a variety of training and testing activities that have been separately reviewed and concurred with by the Commission over the past two decades. In addition, the Navy proposes modest to significant increases in some operations, primarily the number of ordnance used and aircraft and vessel exercises. All of these activities would occur within the Point Mugu Sea Range (Sea Range), an approximately 36,000 square mile area of ocean and controlled airspace, roughly 200 nautical miles (NM) long (north to south) and extending west into the Pacific Ocean from its nearest point at the mainland coast (three NM) at Ventura County out to approximately 180 NM offshore (**Exhibit 1**). The Sea Range includes San Nicolas Island and portions of the northern Channel Islands (Anacapa, Santa Barbara, Santa Cruz, Santa Rosa and San Miguel Islands) and is directly north of the Southern California Range Complex, an approximately 120,000 square nautical mile area also used for Navy training and testing activities (and reviewed by the Commission under Consistency Determination No. CD-0001-18). Proposed activities include flight and vessel operations throughout the Sea Range as well as directed energy (laser and high-powered microwave) activities, missile and target launch operations originating from Naval Base Ventura County (NBVC) Point Mugu and San Nicolas Island and other

training and testing activities within the Sea Range as described in the Navy's Consistency Determination and **Exhibit 2.**

Although the Navy has been carrying out testing and training within the Sea Range since its establishment in 1946, the types and tempo of activities have fluctuated as technologies, systems, operational needs, and procedures have evolved. With this consistency determination, the Navy integrates the numbers and types of platforms and systems that have been brought into use since the Commission last considered overall training and testing operations on the Sea Range in 2001 (CD-002-01).[1]

The Navy also proposes to increase several of these ongoing readiness activities:

> to provide modern instrumented airspace, sea space, testing and training areas, testing and training facilities, and range infrastructure to fully support current, emerging, and foreseeable future [research, development, acquisition, testing and evaluation] and Fleet testing and training requirements; and to ensure the long-term viability of the [Sea Range] while protecting human health and the environment. The Navy's need for the Proposed Action is to allow for continued testing and training in support of military readiness and Department of Defense (DoD) mission requirements as required by Title 10 to provide combat ready forces.

The table below lists the various categories of training and testing operations carried out on the Sea Range each year. The past annual level of activity is listed as the "baseline" and the proposed increase in operational tempo and activity are the "proposed action."

Table 1 - Representative Annual Baseline Activities Compared to the Proposed Action

Activity	Activity Sub Category	Baseline	Proposed Action
Flight Operations (# of sorties)	**Scheduled Range Flights**	3,934	5,288
Sea Range Vessel Operations (# of activities)	**N/A**	300	333
Support Boat Operations (# of activities)	**N/A**	198	199
Sea Range Aerial Targets (# of targets)	**N/A**	104	176
Sea Range Surface Targets (# of targets)	**N/A**	430	522
Ordnance (# of ordnance)	**Bombs**	22	30
	Gun Ammunition	11,670	281,230
	Missiles	231	584
	Rockets	30	40

[1] Operations involving several of these individual systems have been separately reviewed and concurred with by the Commission in recent years as well. For example, in 2009, the Commission concurred with the Navy's negative determination (ND-017-09) for a laser testing and training program at NBVC Point Mugu and San Nicolas Island; in July 2013, the Commission concurred with the Navy's negative determination (ND-0207-13) for countermeasures testing and training for the Sea Range; in August 2013, the Commission concurred with the Navy's negative determination (ND-0213-13) for the construction and use of directed energy test facilities on San Nicolas Island; in 2017, the Commission concurred with the Navy's consistency determination (CD-0006-16) for the replacement and installation of communications cables on the seafloor; and in 2019, the Commission concurred with the Navy's negative determination (ND-0012-19) for construction and use of a directed energy systems integration laboratory on the NBVC Point Mugu shoreline.

	Chaff	20	16
	Flares	28	10
Directed Energy (# of days)	**Lasers/High Power Microwave**	624	624

In its consistency determination submittal, the Navy provides the following overview of its proposed ocean-based training and testing activities:

> The Navy categorizes its at-sea activities into eight functional warfare areas called primary mission areas. The Navy has determined that three of those primary mission areas conducted on PMSR [Point Mugu Sea Range] have the potential to affect coastal uses or resources of the state's coastal zone. PMSR activities in the Proposed Action and addressed for this CZMA CCD [consistency determination] are categorized under three of those primary mission areas. These mission areas encompass five broad categories that reflect all testing and training activities.
>
> • air warfare (air-to-air, surface-to-air)
> • electronic warfare (EW) (DE – lasers and HPM systems)
> • surface warfare (surface-to-surface, air-to-surface, and subsurface-to-surface)
>
> [Research, development, acquisition, testing and evaluation] of new technologies by the DoD occurs continually to ensure that the U.S. military can counter new and anticipated threats. All new Navy systems and related equipment must be tested to ensure proper functioning before delivery to the Fleets for use. The PMSR is the Navy's primary ocean testing area for guided missiles and related ordnance. Testing operations on the Sea Range are conducted under highly controlled conditions, allowing for the collection of empirical data to evaluate the performance of a weapon system or subsystem. Testing conducted in the PMSR is important for maintaining readiness.
> …
> A frequent test conducted at the PMSR is the NAVSEA Combat Systems Ship Qualification Trials (CSSQT). This is a series of comprehensive tests and trials designed to show that the equipment and systems included in the CSSQT program meet combat system requirements. Live and inert weapons, along with chaff, flares, jammers, and lasers, may be used. CSSQTs are conducted within the primary warfare mission areas discussed above.
>
> Weapons testing may contain both flight and surface elements (target, weapon, launch aircraft or vessel, or range support aircraft). Fixed-wing and rotary-wing aircraft, including both manned and unmanned systems, also conduct weapons tests. Tests may be captive carry (i.e., the weapon is not released from the aircraft) or involve the release of ordnance or other expendables, including non-explosive and telemetry (TM)-only warheads and live-fire munition rounds. Chaff or flares may be used during weapons tests, with the restriction that they are expended offshore in compliance with environmental regulations.

Training conducted in parallel with testing activities provides Fleet operators unique opportunities to train with ship and aircraft combat weapon systems and personnel in scripted warfare environments, including live-fire exercises. Combat ship crews train in conjunction with scheduled NAVSEA ship testing and qualification trials, to take advantage of the opportunity to provide concurrent training and familiarization for ship personnel in maintaining and operating installed equipment, identifying design problems, and determining deficiencies in support elements (e.g., documentation, logistics, test equipment, or training).

Concurrent with testing, surface training typically available on the PMSR includes tracking exercises, missile-firing exercises, gun-firing exercises, high-speed anti-radiation missile exercises, and shipboard self-defense system training (e.g., Phalanx [Close-in Weapons System], Rolling Airframe Missile, and Evolved Sea Sparrow Missile). These events are limited in scope and generally focus on one or two tasks. Missiles may be fired against sub-sonic, supersonic, and hypersonic targets. Certain training events designed for single ships are conducted to utilize unique targets only available for training at the PMSR.

Aviation warfare training conducted at PMSR, categorized as unit level training, is designed for a small number of aircraft up to a squadron of aircraft. These training events occur at PMSR as it is the only West Coast Navy venue to provide powered air-to-air targets. These events are limited in scope and generally focus on one or two tasks. These scenarios require planning and coordination to ensure safe and effective training.

Further detail and specificity on proposed training and testing activities is provided on pages 12 to 18 of the Navy's consistency determination, included in **Exhibit 2.**

B. Consultations and Other Agency Approvals

National Marine Fisheries Service
The Navy initiated formal consultation with the National Marine Fisheries Service (NMFS) under the Endangered Species Act in November 2020. The Navy also submitted a request for authorization to NMFS under the Marine Mammal Protection Act in early September 2020 and initiated essential fish habitat consultation under the Magnuson-Stevens Fishery Conservation and Management Act in July 2020. NMFS review of all three is ongoing and will be completed prior to issuance of a final Record of Decision and implementation of the proposed project. The Navy expects to have a final Record of Decision in the Fall of 2021.

U.S. Fish and Wildlife Service
The Navy currently carries out training and testing activities on the Point Mugu Sea Range (including San Nicolas Island and Naval Base Ventura County Point Mugu) under Biological Opinions issued in 2001, 2006, 2012, 2014, and 2016 by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act. These Biological Opinions evaluate effects on the federally endangered California least tern (*Sterna*

albifrons browni), and light-footed clapper rail (*Rallus longirostris levipes*), and the federally threatened western snowy plover (*Charadrius nivosus nivosus*). The Navy determined that the Proposed Action will have no effect on least Bell's vireo (*Vireo bellii pusillus*), tidewater goby (*Eucyclogobius newberryi*), or federally endangered salt marshbird's-beak (*Cordylanthus maritimus ssp. maritimus*).

The Navy proposes to continue implementing measures to avoid or minimize the effects on California least tern, light-footed clapper rail, and the western snowy plover outlined in the 2016 Biological Opinion and does not anticipate the effect of these activities from the proposed project will be different from those discussed in that Biological Opinion. Accordingly, the Navy has stated that no further consultation is required with USFWS based on its concurrence that the activities are the same as those previously consulted upon. USFWS Biological Opinions for San Nicolas Island and Point Mugu remain valid and would be followed during the proposed project.

Tribal Governments

As part of its preparation of an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), the Navy invited government to government consultation from the seven tribal contacts listed below. On April 10, 2020, Mr. Gary DuBois, Tribal Historic Preservation Officer, provided a response on behalf of the Pechanga Band of Luiseño Indians (Tribe). Mr. DuBois' letter described the importance of San Nicolas Island as a Traditional Cultural Property and Archeological District and expressed the Tribe's interest in being included in all phases of the Navy's environmental review process. Specifically, Mr. DuBois' letter expressed the Tribe's interest in a consultation meeting and in assisting the Navy to ensure that every effort is made to avoid effects to human remains, funerary objects, and tribal cultural resources.

- The Honorable Temet A. Aguilar
  Chairperson, Pauma Band of Luiseño Mission Indians
- The Honorable Fred Nelson
  Chairperson, La Jolla Band of Luiseño Mission Indians
- The Honorable Robert H. Smith
  Chairperson, Pala Band of Luiseño Mission Indians
- The Honorable Mark Macarro
  Chairperson, Pechanga Band of Luiseño Mission Indians
- The Honorable Bo Mazzetti
  Chairperson, Rincon Band of Luiseño Mission Indians
- The Honorable Kenneth Kahn
  Chairperson, Santa Ynez Band of Chumash Mission Indians
- The Honorable Scott Cozart
  Chairperson, Soboba Band of Luiseño Mission Indians

As described in its email to Commission staff on October 13, 2020, the Navy is engaged in additional ongoing consultation efforts with the two Tribes that responded to its outreach efforts:

> The Navy is in active government to government consultation with the Pechanga and Rincon Tribes, the only two tribes that responded to the Navy's invitation. During a government to government meeting held on September 1, 2020, members of the Pechanga Tribe indicated they would provide the Navy with a set of questions in anticipation of the next meeting. The Navy has indicated it is currently awaiting these questions. On November 19 and 20, 2020, Commission staff heard from both the Navy and Pechanga Tribe that the Navy would be restarting its consultation process and would be including additional information the Pechanga Tribe was recently able to provide.
>
> The Navy's last call with the Rincon Tribe was on October 7, 2020 and the next meeting is tentatively scheduled to occur 30 days later. The Rincon Tribe is requesting an annual reporting of activities that have the potential to affect cultural resources and the request is under consideration by the Navy.

Commission staff reached out to both Tribes to inform them of the Commission's federal consistency review process and timing and to invite further consultation. The results of this consultation are discussed below in the section on cultural resources.

C. Marine Resources and Water Quality

Section 30230 of the Coastal Act states:

> Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 of the Coastal Act states:

> The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats and minimizing alteration of natural streams.

The Navy proposes a modest expansion of testing and training activities carried out within the Point Mugu Sea Range (Sea Range). Historically, the scale and frequency of Navy activities have varied from year to year. For comparison purposes, levels of testing and training conducted in 2001, as described in Consistency Determination No. CD-002-01, are defined as the existing or baseline condition. Comparing the current

Navy proposal to baseline conditions, future Navy operations on the Sea Range would include: (1) a 34% increase in aircraft activity; (2) a 7% increase in ship and boat operations; (3) a 153% increase in missiles fired; (4) a 2310% increase in gunnery rounds expended; (5) a 31% increase in aerial and surface targets deployed; and a roughly 33% increase in the number of rockets and bombs used (see Table 1, page 6 for specific numbers of each).

The Navy's consistency determination and accompanying Draft EIS/OEIS (DEIS) describe the effects of both baseline levels and expanded operations on marine resources, including water quality, marine biological productivity, marine mammals, fish and sea turtles.[2] As discussed further below, these effects are most likely to be associated with: (1) the release of contaminants and debris into marine waters,(2) death or injury of marine mammals from the use of explosives, and (3) collisions of Navy vessels with marine mammals (ship strikes).

Water Quality

The proposed project would affect marine water quality through the release of explosive residues, fuels and propellants, metals and other materials into the marine environment. The project's DEIS discusses the likelihood and magnitude of potential adverse impacts to marine water quality from the proposed training and testing activities as follows:

> The highest concentrations of munition residues result from detonation failure (i.e., low-order detonations or unexploded ordnance). As a general rule, between 10,000 and 100,000 high-order detonations deposit the same mass of explosive residue as one low-order detonation of the same munition (U.S. Environmental Protection Agency, 2012b). Over 98 percent of explosives byproducts introduced into the environment result from low-order detonations or unexploded ordnance; when a munition successfully detonates, over 99 percent of constituents are burned and little to no explosive material remains in the environment (Hewitt et al., 2003). Therefore, an estimate of the amount of explosives material and byproducts from an explosion that would be introduced into the environment is based solely on the failure rate for each type of munition, discounting the negligible contribution from munitions that successfully detonate. The military does not track failure rates for all munitions. The available data typically report failure rates ranging from less than 2 percent up to 10 percent. For the purpose of estimating the amount of explosives and explosive byproducts entering the marine environment, a 5 percent failure rate is applied to all types of munitions used. The amount of explosive materials is estimated by multiplying the failure rate by the number of explosive munitions and the net explosive weight of each munition used during testing and training activities.
>
> The majority of explosive material would result from munitions used at least 3 NM [nautical miles] from shore and often more than 12 NM from shore, which diminishes any potential impact on nearshore sediments and water quality. Additionally, an important consideration for offshore areas is the massive volume of

[2] For additional information on this analysis, please refer to the project's DEIS, available online: https://pmsr-eis.com/Documents/2020-Draft-EIS-OEIS-Documents/2020-Draft-EIS-OEIS

> water in the PMSR [Sea Range] Study Area, which is constantly mixed by currents moving throughout the water column. Since there are no fixed aim points or permanent targets, munitions would be widely distributed in the PMSR Study Area and would not accumulate in particular areas. As such, the ocean's volume and the dilution caused by the currents would reduce long-term adverse impacts. Explosive material entering the environment due to failed detonations would result in short-term minor adverse impacts on water quality and sediment immediately adjacent to the point of release. As the concentrations dissipate due to mixing and dilution, the effects would be reduced to negligible as concentrations would fall below detection levels beyond the point of release and over the long-term from degradation (Briggs et al., 2016; U.S. Department of the Navy, 2010a, 2010b, 2013c).
> …
> Although there is a substantial increase in explosive usage under Alternative 1 [the proposed project] (see Table 3.0-7), studies conducted at several Navy ranges where explosives have been used more frequently and for longer periods of time indicate that explosives constituents are released into the aquatic environment over long periods of time and do not result in water or sediment toxicity (Briggs et al., 2016; U.S. Department of the Navy, 2010a, 2010b, 2013c). The fate and transport of munitions constituents in underwater environments is affected by numerous physical, chemical, and biological processes that typically combine to attenuate the concentrations of munitions constituents and their degradation products at a given site. Based on these and other analyses conducted for similar activities (U.S. Department of the Navy, 2018), there would be minor short-term and negligible long-term impacts on sediments and water quality from explosives and explosive byproducts, but overall potential impacts are expected to be less than significant.

Although the proposed project would involve increases in the amount of explosives and ordnance used within the Sea Range, the large size of the Sea Range and dispersion of the activities involving explosives and ordnance across its outer waters (typically beyond 12 nautical miles from shore), would significantly limit the potential for concentrations of explosive residues to accumulate and/or pass into the nearer-shore waters of California's Coastal Zone.

Fuel and propellant materials would be similarly dispersed and diluted to low concentrations if they enter coastal waters, as discussed in the DEIS:

> The distribution of munitions that use propellants, fuels, and initiators is uniform throughout the PMSR Study Area. Under Alternative 1 [the proposed project], propellants, fuels, and initiators would be associated with several types of munitions used during testing and training activities, specifically missiles and rockets. The largest quantities of chemicals would be expended from the use of propellants and fuels. Rocket motors are over 99 percent efficient at burning propellant; therefore, no measurable amounts of propellant or combustion products would enter the water column. The propellant used by rockets and missiles is typically consumed prior to impact at the water's surface, even if the munition fails to detonate upon impact, leaving little residual propellant to enter the water.

> For properly functioning munitions, chemical, physical, or biological changes in sediments or water quality would not be detectable. Impacts would be negligible for the following reasons: (1) the size of the area in which expended materials would be distributed is several square miles; (2) most propellant combustion byproducts are benign, while those of concern would be diluted to below detectable levels within a short time; (3) 98 percent of propellants are consumed during normal operations; (4) the failure rate of munitions using propellants and other combustible materials is less than 5 percent; and (5) most of the constituents of concern are biodegradable by various marine organisms or by physical and chemical processes common in marine ecosystems. Therefore, potential impacts of propellants, fuels, and initiators on sediments and water quality from testing and training activities would be less than significant.

The project's DEIS also concludes that the proposed release of metals associated with munitions and other expended materials would have negligible effects to water quality:

> Chemical, physical, or biological changes to sediments or water quality in the Study Area would not be detectable and would be similar to nearby areas without munitions or other expended materials containing metals. This conclusion, which has been supported by research studies in similar locations with similar testing and training activities, is based on the following assumptions: (1) most of the metals are benign, and those of potential concern make up a small percentage of expended munitions and other metal objects; (2) metals released through corrosion would be diluted by currents or bound up and sequestered in adjacent sediment; (3) elevated concentrations of metals in sediments would be limited to the immediate area around the expended material; and (4) the areas over which munitions and other metal components would be distributed are large.

Therefore, for the reasons described above, the proposed project is not expected to result in adverse impacts to water quality within the coastal zone due to the release of explosive residues, fuels/propellants or metals.

Marine Debris

As part of the proposed project, the Navy would also intentionally and accidentally release other materials into the marine environment. As noted in the project DEIS, "These other expended materials include flares, chaff, expendable towed and stationary targets, wires and cables, and miscellaneous components." The following excerpts from the project DEIS provide more information on these different materials and their compositions:

> Target-Related Materials
> At-sea targets are usually remotely operated airborne and surface traveling units, many of which are designed to be recovered for reuse. However, if they are used during activities that use high-explosives, they may result in fragments and ultimate loss of the target. Expendable targets that may result in fragments include air-

launched decoys and surface targets (e.g., marine markers, cardboard boxes, and 10 ft. diameter red balloons). Most target fragments would sink quickly to the seafloor. Floating material, such as Styrofoam, may be lost from target boats and remain at the surface for some time.

Chaff
Chaff consists of reflective, aluminum-coated glass fibers used to obscure ships and aircraft from radar-guided systems. Chaff, which is stored in canisters, is either dispensed from aircraft or fired into the air from the decks of surface ships when an attack is imminent. The glass fibers create a radar cloud that mask the position of the ship or aircraft. Chaff is composed of an aluminum alloy coating on glass fibers of silicon dioxide (U.S. Department of the Air Force, 1997). Chaff is released or dispensed in cartridges or projectiles that contain millions of fibers. When deployed, a diffuse cloud of fibers is formed that is undetectable to the human eye. Chaff is a very light material, similar to fine human hair. It can remain suspended in air anywhere from 10 minutes to 10 hours and can travel considerable distances from its release point, depending on prevailing atmospheric conditions (Arfsten et al., 2002); (U.S. Department of the Air Force, 1997). Doppler radar has tracked chaff plumes containing approximately 900 g of chaff drifting 200 mi. from the point of release, with the plume covering greater than 400 mi. (Arfsten et al., 2002).
…
Chaff cartridge plastic end caps and pistons would also be released into the marine environment, where they would persist for long periods and could be ingested by marine animals. Chaff end caps and pistons sink in saltwater (Spargo, 2007).

Flares
Flares are pyrotechnic devices used to defend against heat-seeking missiles, where the missile seeks out the heat signature from the flare rather than the aircraft's engines. Similar to chaff, flares are also dispensed from aircraft. The flare device consists of a cylindrical cartridge approximately 1.4 in. in diameter and 5.8 in. in length. Flares are designed to burn completely. The only material that would enter the water would be a small, round, plastic compression pad or piston (0.45–4.1 grams depending on flare type). The flare pads and pistons float in sea water.

Miscellaneous components include decelerators and parachutes. The project DEIS states:

Decelerators/parachutes used during testing and training activities are classified into four different categories based on size: small, medium, large, and extra-large. Aerial targets (drones) use large (between 30 and 50 ft. in diameter) and extra-large (80 ft. in diameter) decelerators/parachutes. Large and extra-large decelerators/parachutes are also made of cloth and nylon, with suspension lines of varying lengths (large: 40–70 ft. in length [with up to 28 lines per decelerator/parachute]; extra-large: 82 ft. in length [with up to 64 lines per decelerator/parachute]). Some aerial targets also use a small drag parachute (6 ft. in diameter) to slow their forward momentum prior to deploying the larger primary

> decelerator/parachute. Unlike the small- and medium-sized decelerators/ parachutes, drone decelerators/parachutes do not have weights attached and may remain at the surface or suspended in the water column for some time prior to eventual settlement on the seafloor.

The project DEIS also provides the following discussion of the fate of these materials in the ocean:

> Plastics and other floating expended materials (e.g., rubber components) would either degrade over time in the water column or on the seafloor or wash ashore. Materials that sink to the seafloor would be widely distributed over the PMSR Study Area. As described in Section 3.2.4.1.2 (Marine Debris in Nearshore and Offshore Areas of the Point Mugu Sea Range Study Area), the worldwide use and disposal of plastics is rapidly increasing the amount of plastic accumulating in large areas of the world's oceans. Small pieces of plastic associated with the use of chaff, flares, and targets would likely persist in the marine environment as floating debris in the water column or on the seafloor. Plastic floating near the surface and exposed to the sun and mechanical wear and tear would break down over time. Plastic that sinks in the water column below the photic zone or to the seafloor would degrade more slowly or not at all. Only small pieces of plastics would be expended—larger pieces from targets are recovered— and dispersed over a large area. Therefore, potential impacts from military expended material, such as chaff and flares, on sediments or water quality would be less than significant.

In addition to these materials released into the ocean, jet-assisted take-off (JATO) and rocket-assisted take-off (RATO) operations at Naval Base Ventura County Point Mugu and San Nicolas Island result in the release of metal cannisters into the environment. While efforts are made to collect these cannisters, approximately 2,000 have accumulated over the years, some within sensitive wetland and estuary habitats.

To help address this accumulation of JATO/RATO cannisters and offset the expended materials like those described above that are discharged into the marine environment and not able to be recovered, the Navy recently awarded a new contract with the intent of increasing the number of cannisters removed up to approximately 350 per year. Previously, the cannister removal program had a goal of 100-200 per year but wasn't always able to meet it, thus slowing the progress of addressing the backlog. In addition to the JATO/RATO cannister recovery efforts, the Navy has been working with the National Marine Fisheries Service to establish an annual marine debris clean-up effort for San Nicolas Island.

This program is set to begin in 2020, continue on an annual basis and is expected to result in the collection, removal and disposal of large quantities of marine debris and lost fishing gear on an annual basis. For example, a recently completed clean-up of the island's shoreline by the Navy resulted in the recovery of over a ton of accumulated debris. Although the composition of this material in the past has been primarily lost and abandoned fishing gear rather than Navy expended materials, those materials are often

discharged far from shore in areas that make them unlikely to wash up on the island's shoreline. While recovery of these materials is not practical, the Navy's recovery and disposal of general marine debris from San Nicolas Island on an annual basis is expected to provide an adequate offset and result in a net reduction in the total amount of marine debris offshore of California. Further, the Navy would collect data on the type and volume of debris collected from SNI and submit it to the Ocean Conservancy's marine debris tracking database for analysis.

In addition to the increased clean-up efforts on SNI, the Navy will also be funding a marine debris sampling and characterization study in 2022 using protocols developed by the National Oceanic and Atmospheric Administration (NOAA). The results of this study and the data provided to Ocean Conservancy's database will help target marine debris response and reduction efforts carried out by the Navy, NOAA, the Commission and environmental organizations.

Finally, the Navy has also stated in correspondence with Commission staff on November 19, 2020 that the:

> SNI Integrated Natural Resources Management Plan (INRMP) will be revised to include a section on marine debris clean-up for SNI. It will include records for historical clean-ups as well as methods for future clean-ups. Data sheets and where they are disseminated to will be formalized, as well as a priority list of beaches and rocky shoreline to be cleaned. Conservation recommendations will be included in this section as well as a discussion on marine debris impacts to natural resources within the INRMP boundary. Funding requirements for supporting clean-up logistics will also be described and introduced as an environmental program requirement (EPR) in the INRMP implementation table.

These new efforts and measures would all be added to the existing and historic efforts carried out by the Navy on the Sea Range to collect and remove marine debris. A summary of recent past events was provided to Commission staff by the Navy in correspondence received on October 12, 2020 and categorized by Navy installation within the Sea Range:

> [Naval Base Ventura County] Point Mugu - Over the last 10 years, the Navy has conducted three beach cleanups with USFWS on Point Mugu's Holiday Beach and Eastern Arm. Additionally, there were three marsh clean up events and multiple events on Family beach conducted by volunteers and coordinated by installation environmental staff. Unfortunately, specific numbers for quantities of trash collected were not recorded.
>
> SNI – The clean-up events for SNI are tracked by Ocean Conservancy. The most recent past events were held in 2014 and 2016. In 2014, 485 pounds of debris was collected and in 2016, 2,142 pounds of debris was collected off two beaches. Much of the debris collected was fishing nets, hoses, tires, and smaller items that fit in trash bags.

> [Naval Base Ventura County] Port Hueneme – The most recent cleanup event was held in 2018 and focused on the major canals that transect the base. Over a two day event approximately 440 pounds of debris was collected by 58 volunteers. Debris characterization identified that by volume the majority came from fast food containers, bags, and plastic covering from Glovis car lots, while by weight, the majority came from scrap metal, bolts, misc metal, and wood. ting efforts include

The continuation of these existing marine debris removal efforts, the increased JATO/RATO cannister recovery work and the addition of the new efforts that the Navy is initiating on SNI (annual cleanups, debris characterization study and inclusion of marine debris in the island's Integrated Natural Resources Management Plan) would offset expended materials that are discharged into the marine environment and cannot be immediately recovered and provide for an overall net reduction in marine debris within the Sea Range and surrounding areas.

Explosives Use

The Navy is proposing an expansion in the historic levels of training and testing activities involving explosives. Specifically, the Navy proposes a 2300% increase in gunnery rounds, a 150% increase in surface-to-surface missiles, a 50% increase in air-to-surface missiles and a 35% increase in air-to-surface bombs (see Table 1 on page 6 for exact numbers of each). However, as discussed in further detail below, not all of the ordnance proposed to be used would result in explosions or high levels of underwater sound – in particular, the approximately 281,000 gunnery rounds proposed for use would include many smaller sized rounds that would not generate significantly elevated levels of underwater sound or result in explosions. Additionally, some munitions would be directed at in-air targets and would pose little risk of acoustic or direct injury to marine wildlife.

The explosive munitions proposed to be used at or near the ocean surface are summarized in Table 2 below, adapted from the project's DEIS. In this table, the proposed project is Alternative 1 and the explosive sources are listed in ascending order by explosive weight. In total, the Navy proposes to use up to 3,407 explosive sources per year that would involve five or more pounds of explosive. This would be roughly ten times more than the 355 used per year currently under the baseline condition.

Table 2 - Explosive Sources Quantitatively Analyzed

Bin	Net Explosive Weight1 (pounds [lb.])	Example Explosive Source	Baseline		No Action Alternative		Alternative 1		Alternative 2	
			Annual	7-year Total	Annual	7-year Total	Annual	7-year Total	Annual	7-year Total
E1	0.1–0.25	Medium-caliber projectiles	1,470	10,290	0	0	52,000	364,000	14,200	99,400
E3	> 0.5–2.5	Large-caliber projectiles	2,000	14,000	0	0	10,000	70,000	2,230	15,624

E5	> 5–10	5 in. projectile	200	1,400	0	0	3,030	21,210	200	1,400
E6	> 10–20	Hellfire missile	40	280	0	0	160	1,120	40	280
E7	> 20–60	HARM missile	57	399	0	0	50	350	114	798
E8	> 60–100	Standard missile	40	280	0	0	110	770	58	406
E9	> 100–250	500 lb. bomb	12	84	0	0	37	259	15	105
E10	> 250–500	Harpoon missile	6	42	0	0	20	140	5	35

Notes: HARM = High-speed Anti-Radiation Missile, > = greater than. The increase in tempo under each Alternative is mostly a result of an increase in Combat Systems Ship Qualification Trials, as discussed in Section 2.1.4 (Combat Systems Test).

In the DEIS, the Navy explains the proposed activity level as:

> …the highest potential annual level of increased tempo for planned operations as identified during interviews with range test managers, test and scheduled training mission requirements, or existing NEPA documents for flight operations, vessel operations, aerial targets, surface targets, and ordnance… Using the anticipated maximum level of potential testing and scheduled training ensures that Alternative 1 meets the purpose of and need for the Proposed Action, ensures adequate capacity to meet surge years to accommodate wartime conditions, and provides the Navy with the capacity to meet long-term testing and scheduled training requirements.
> …
> Alternative 1 is the preferred alternative because it supports the full spectrum of potential testing and training necessary to respond to a future national emergency crisis and is based on increasing requirements to meet the current geopolitical environment.

These types of activities have the potential to adversely affect marine mammals and wildlife through direct and acoustic injury if they are in proximity to associated explosions. Direct injury would occur to marine mammals located within an explosive blast radius or exposed to materials or fragments ejected from an explosion. Exposure to explosive energy waves underwater are particularly likely to result in injury to air- or gas-filled organs such as lungs and digestive organs. Acoustic injury could result in temporary or permanent loss of hearing ability, either of which would be significant for marine mammals that rely on sound and hearing to communicate and maintain social cohesion, find food, avoid predators, reproduce and care for young.

The analysis in the project DEIS estimates that explosions occurring at or near the ocean surface with five to ten pounds of explosive materials (bin E5 on the table above) would pose a risk of direct injury (non-auditory) to a marine mammal within 115 to 450 feet and a risk of mortality to a marine mammal within 36 to 147 feet. With an increase in explosive weight, these injury and mortality ranges increase. The largest types of explosive munitions proposed to be used (bin E10 in the table above) have much larger

predicted ranges to marine mammal injury and mortality (within 328 to 1575 feet and 131 to 623 feet, respectively). Smaller classes of explosives would only be expected to pose a direct (non-acoustic) injury or mortality risk to marine mammals in the immediately surrounding area (80 feet or less).

The Navy's analysis also includes estimates of the ranges predicted for the onset of temporary and permanent acoustic injuries associated with the use of explosives at or near the ocean surface. Because of the hearing sensitivity of marine mammals, acoustic injury can be triggered at much greater distances than the direct (non-acoustic) injury and mortality ranges described above. The specific ranges are estimated for different types of marine mammals based on the latest research on hearing frequencies, sensitivities and sound level thresholds for disturbance and injury. For the most sensitive species (i.e., cetaceans such as harbor porpoises that specialize in high frequency sounds), effects ranges for acoustic injuries would be within 558 feet for the smallest types of explosives (bin E1 in Table 2) and within 16 miles for the largest types of explosives (bin E10).

The Navy summarizes the results of its analysis in Appendix C of the project DEIS, the "Predicted Marine Mammal Effects Resulting from Navy Activities Involving Use of Explosives at or Near the Ocean's Surface" (https://pmsr-eis.com/portals/pmsr-eis/files/EIS/Draft_EIS/section/PMSRDEISAppendixCEstimatedMarineSpeciesImpactsTablesApril2020.pdf). This analysis provides a worst-case estimate of adverse impacts in that it assumes no avoidance behavior on the part of marine mammals and does not integrate the likely benefits that would result from the impact avoidance and minimization measures proposed to be implemented by the Navy.

The project's DEIS further describes the analysis as follows:

> Basically, the quantitative analysis for use of explosives detonating at or near the water surface takes into account the type of Navy activity, the marine species density in locations where activities occur, acoustic modeling of underwater sound, and other environmental factors such as seasonal changes in the density and distribution of marine mammals. It is important to note that underwater acoustic effects numbers, as presented in this appendix, are the summations of estimated fractional probability of marine mammal exposures to underwater sound, not necessarily the number of individuals impacted. For example, some individual marine mammals could be impacted several times, while others in the population may not experience any impacts as a result of Navy activity.

Of the 35 marine mammal species analyzed as present within the Sea Range area, the DEIS analysis estimates that adverse impacts would occur to 20 of them on an annual basis as part of the proposed project. These impacts would be limited to those from acoustic stressors (behavioral responses, temporary or permanent impacts to hearing). The DEIS concludes that no direct injury or mortality to any marine mammals would occur and the Commission is not aware of any past reports of such incidents within the

Sea Range. **Exhibit 3** to this report provides a table showing the species that would be affected as well as the type of effects and number of occurrences.

The most numerous impacts under the worst-case scenario analyzed are anticipated to occur to species of dolphin and porpoise commonly found within the open ocean portions of the Sea Range, with 406 annual incidents of temporary hearing impairment (also referred to as a temporary threshold shift or TTS) and 49 annual incidents of permanent hearing impairment (permanent threshold shift or PTS) to the Dall's porpoise and 65 TTS incidents and 15 PTS incidents affecting the short-beaked common dolphin per year. Harbor seals are also anticipated to experience large numbers of acoustic impacts under the worst-case scenario analyzed in the project DEIS: 120 incidents of TTS and 14 incidents of PTS per year.

Of the large whale species, acoustic impacts to blue, fin, gray and humpback whales are all analyzed to include between four and seven incidents of TTS per year. Only one incident to PTS is predicted under the worst-case scenario analyzed. This would affect the fin whale. All other predicated effects to large whales would be behavioral disturbance.

Across all 20 species of marine mammals likely to be affected, the DEIS analysis indicates a combined total of 772 incidents of behavioral disturbance, 771 incidents of TTS and 116 incidents of PTS per year are predicted.

As previously noted, however, these impact estimates are based on worst-case modeling that does not integrate those risk avoidance and minimization measures that the Navy proposes to implement or those that may be successfully employed by marine mammals (such as moving out of the affected area). Regarding the measures proposed to be implemented by the Navy, two are expected to reduce acoustic impacts, particularly for large whales: (1) the avoidance of most of the portions of the Sea Range that have been designated Biologically Important Areas for whales and porpoises due to the consistently high densities of animals observed within them; and (2) the use of vessel- and aircraft-based monitors to help confirm that proposed training and testing sites are devoid of marine mammals prior to the initiation of training and testing activities. These and other mitigation measures are discussed in detail later in the report.

Biologically Important Areas

As the Commission found in Consistency Determination No. CD-0001-18:

> The [Biologically Important Areas] designation was created to synthesize decades of scientific research, monitoring and marine mammal surveys and to serve as a tool for resource management agencies responsible for integrating the best available scientific understanding into decision making. Each Biologically Important Area (BIA) was established as a result of a four year long process involving scores of scientific experts and decades of research results and data on marine mammal biology, behavior, and spatial use trends. The BIA sites represent spatially explicit

> migratory corridors, feeding grounds, breeding aggregations, and critical habitats for small resident populations of marine mammals. The only sites that received the designation are those for which an overwhelming amount of data and scientific consensus is available. As noted in the report describing the BIA designation process and intent of the designation (Calambokidis et al, 2015):
>
> > The goal of identifying BIAs is to synthesize existing biological information in a transparent format that is easily accessible to scientists, managers, policymakers, and the public for use during the planning and design phase of anthropogenic activities for which U.S. statutes require the characterization and minimization of impacts on marine mammals.
>
> As such, the BIAs identified off the coast of California represent areas of special biological significance under Section 30230 of the Coastal Act and are therefore required to be provided with special protection.

The National Marine Fisheries Service has identified seven distinct sites partially or wholly within the Sea Range as Biologically Important Areas (BIAs). Each area is focused on an individual species and a particular life stage or season. All seven BIAs and their location relative to the Sea Range boundaries is shown in **Exhibit 4**. Although marine mammals are found throughout the entirety of the Sea Range, these seven areas represent critically important sites for some of the most endangered and imperiled species known to be present within it.

For example, the northern portion of the Sea Range overlaps with a section of the BIA established for the small, year-round resident Morro Bay population of harbor porpoise. The southern end of this BIA also partly overlaps with two others near Point Conception that were established for seasonal feeding aggregations of humpback and blue whales. Two other areas designated as BIAs for seasonal blue and humpback whale feeding aggregations are also found around San Miguel and Santa Rosa Islands and another includes migratory pathways for gray whales that extend along the mainland Santa Barbara and Ventura County coasts and on both sides of the Channel Islands. The seventh BIA within the Sea Range is located near San Nicolas Island in an area frequently used by blue whales from June through October.

In its November 4, 2020 letter to Commission staff (included as **Exhibit 5**), NRDC highlights the importance of these BIAs and densities of whales they support [footnotes provided in original]:

> NMFS and its experts focused their BIAs for the west coast on areas with consistently high sighting concentrations, using data from years of coastal small-boat surveys that were designed to maximize encounters with target species, as well as from other sources. [5] The nine BIAs for blue whales represent only 2% of U.S. waters in the West Coast region but encompass 87% of the sightings documented; similarly, the seven BIAs for humpback whales represent 3% of U.S. waters in the West Coast region, but the areas encompass 89% of the sightings

documented.[6] As further evidence of the importance of these areas, a concordance was observed between a number of the BIAs—including the three blue whale and two humpback whale BIAs overlapping with the Point Mugu range—[7] and the mean predicted densities from habitat density models generated from the Southwest Fisheries Science Center's line-transect data, which have been collected systematically since the 1990s at 3- to 5-year intervals.[8]

Because the BIAs in the Sea Range support such consistent use by endangered whale species, much of the discussion between Commission staff and the Navy regarding anticipated adverse impacts to marine mammals from its proposed use of explosives have focused on these areas. Specifically, Commission staff requested that the Navy consider potential limitations on the type and frequency of training and testing activities that would take place within the BIAs as a means of impact avoidance and minimization. The Navy highly values operational flexibility and its ability to access and use the entirety of the Sea Range, and thus opposes implementation of area-based restrictions. However, through discussions with Commission staff, the Navy has been able to confirm that five of the seven BIAs are very unlikely to be used for training and testing activities involving explosives or gunnery exercises. These BIAs include those established for the Morro Bay population of harbor porpoise, and seasonal blue and humpback whale feeding aggregations near Point Conception and San Miguel Island. The Navy has no current plans to use these areas for activities involving explosives or ordnance and has provided documentation showing the historic lack of use of the areas for such activities, including during the recent five year period from 2014 through 2018.

In addition to the potential risk to marine mammals that the use of explosives and gunnery in these areas would present, these BIAs are also located near shore in areas with high levels of existing human use as well. Commercial and recreational fishing activities and vessels are commonly found in these areas and they are located in close proximity to commercial shipping lanes and existing oil and gas production facilities such as platforms and pipelines. Accordingly, these five BIAs present a variety of logistical and safety challenges for the Navy and are therefore rarely, if ever used for training and testing activities involving explosives or gunnery exercises. The limited use that does occur is most typically associated with through transit to or from other areas of the Sea Range. During its federal consistency review process, the Navy confirmed that the majority of its proposed training and testing activities involving explosives or gunnery exercises within the Sea Range would be located further from shore and beyond 12 nautical miles – outside of the seaward extent of most of the area's BIAs.

The two remaining BIAs (the gray whale migration BIA and the blue whale feeding BIA near San Nicolas Island) that fully or partly overlap the Sea Range would likely experience greater levels of use by the Navy as part of the proposed project. However, the majority of the gray whale migratory corridor BIA is located outside of the Sea Range or within close proximity to the shoreline in the area typically avoided by the Navy. These portions of the BIA typically experience the highest levels of use by gray whales. While the BIA was established to include all the known pathways through the Southern California Bight for gray whales migrating both north and south along the

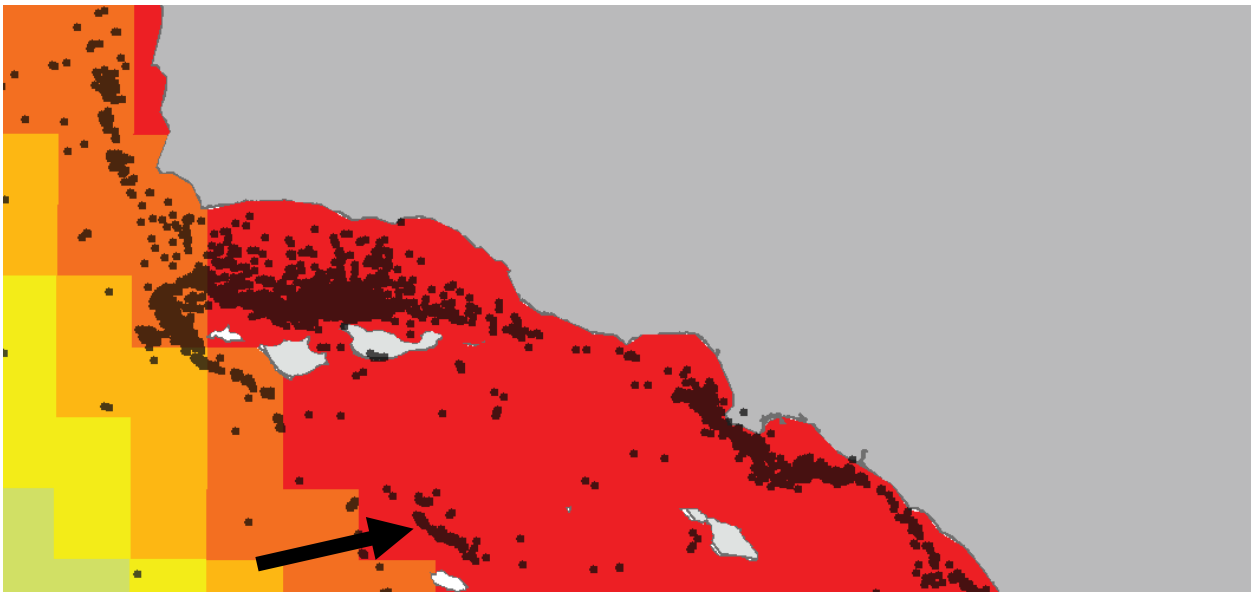
California coast, the highest numbers are typically close to the mainland coast – particularly during the most vulnerable northward migration for gray whales with calves. As noted in Calambokidis et al 2015:

> Some gray whales may take a migration path farther offshore, so an additional potential presence buffer extending 47 km from the coastline was added to the BIAs. Although gray whales typically tightly follow the coastline near the mainland, they have been observed taking a more direct route across larger bodies of water in California (Rice & Wolman, 1971; Mate & Urbán-Ramirez, 2003). Particularly during the northbound migration, gray whales with calves migrate closer inside the bay than adults and juveniles. In the Southern California Bight, migrating gray whales may deviate farther from the mainland as some are routinely seen near the Channel Islands (Daily et al., 1993).

Therefore, although a portion of the gray whale migration BIA extends across the Sea Range and into areas more likely to experience greater use for Navy training and testing activities, these portions of the large BIA are expected to support lower densities of gray whales during typical migrations Further, information regarding past training and testing activities (during the five year period from 2014 through 2018) provide a strong indication that those involving explosives and gunnery exercises are sited in the seaward-most portion of the Sea Range, well beyond the outer edge of the Channel Islands used by gray whales during migration. In its September 24, 2020 response to the Commission staff's request for the Navy to consider limiting its activities within the gray whale migration BIA, the Navy stated:

> Almost all gray whales moving through the PMSR [Sea Range] are from the non-endangered Eastern North Pacific stock. There are no indications that Navy activities would significantly affect the migration behavior of individuals. The gray whale migration area covers the entire eastern portion of the PMSR Study Area, including the high use area around SNI. The Navy cannot avoid or reduce the use of this large portion without significant impact on Navy readiness.

The final BIA located within the Sea Range is a small area north of San Nicolas Island consistently shown to support blue whale feeding during the months of June through October. As shown the figure below (adapted from Calambokidis et al 2015), the area was established to include the site identified with the black arrow. This is a discrete zone in which a large number of sightings have occurred (black dots) and in which the predicted density of blue whales is high (as indicated by the red color). However, relative to the BIAs established to encompass the sightings within the Santa Barbara Channel and around the Palos Verdes Peninsula farther south (the more dense accumulations of black dots in the figure), fewer whales have been observed in this area near San Nicolas Island (this may be partially due to differences in observation effort, however).



Throughout its discussions with Commission staff, the Navy has maintained that this site is essential for training and testing operations due to its proximity to San Nicolas Island, a key land facility within the Sea Range. In its September 24, 2020 response to questions from Commission staff, the Navy summarizes the challenges associated with limitations on its use of the blue whale BIA near San Nicolas Island:

> The San Nicolas Island (SNI) blue whale feeding area overlaps a primary testing and training area used for decades (Enclosure 3). The area is essential for testing and training given its proximity to SNI. The area is used during activities requiring an aerial target impact area, missile launches from SNI, aerial and ship-based gunnery events, and sea surface missile launches. Moving these activities farther from SNI and outside of the SNI Feeding Area would not be possible, because the added distance would substantially limit the capabilities of the extensive range support infrastructure, such as ground-based telemetry, radar, antenna, and other ground-based command transmitter systems that provide for the safe, controlled testing of unmanned targets, platforms and missiles.

Adverse Impact Avoidance, Minimization and Mitigation Measures

Rather than avoiding the use of the blue whale BIA near SNI and the entirety of the gray whale BIA located within the Sea Range, the Navy would instead rely on the range of adverse impact avoidance and minimization measures it has developed over the years for marine mammals. These measures would also be implemented during all Navy operations and activities involving explosive materials and gunnery exercise throughout the Sea Range and primarily rely on the establishment of “mitigation zones” around the intended targets.

As described in Section 5.0 of the project DEIS - Standard Operating Procedures and Mitigation - these mitigation zones can vary in diameter from 200 yards to 2,500 yards around the intended target based on the weight of explosives proposed to be used. The

DEIS excerpt below describes the protocol implemented for the mitigation zone for deployment of explosive bombs. Nearly identical protocols are used for explosive missiles and other types of ordnance:

> • Prior to the initial start of the activity (e.g., when arriving on station):
> − Observe the mitigation zone for floating vegetation; if observed, relocate or delay the start until the mitigation zone is clear.
> − Observe the mitigation zone for marine mammals and sea turtles; if observed, relocate or delay the start of bomb deployment.
>
> • During the activity (e.g., during target approach):
> − Observe the mitigation zone for marine mammals and sea turtles; if observed, cease bomb deployment.
>
> • Conditions for commencing/recommencing of the activity after a marine mammal or sea turtle sighting before or during the activity:
> − The Navy will allow a sighted marine mammal or sea turtle to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing bomb deployment) until one of the following conditions has been met: (1) the animal is observed exiting the mitigation zone; (2) the animal is thought to have exited the mitigation zone based on a determination of its course, speed, and movement relative to the intended target; (3) the mitigation zone has been clear from any additional sightings for 10 min.; or (4) for activities using mobile targets, the intended target has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.
>
> • After completion of the activity (e.g., prior to maneuvering off-station):
> − When practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), observe the vicinity of where detonations occurred; if any injured or dead marine mammals or ESA-listed species are observed, follow established incident reporting procedures.
> − If additional platforms are supporting this activity (e.g., providing range clearance), these assets will assist in the visual observation of the area where detonations occurred.

In addition to the establishment and monitoring of mitigation zones, the Navy also uses a notification system to alert training and testing event participants if the presence of marine mammals within a proposed activity area is likely. This notification process is described in correspondence to Commission staff from the Navy as follows:

> The Navy uses recent marine mammal sighting data to determine general presence of marine mammal species in the Southern California area and issue alerts to event managers. These data are not used to alter schedules or siting of events because of geographic bias in marine mammal reporting, lag times in data reporting, and the highly dynamic nature of cetacean movements. We instead focus efforts on event

participant awareness and marine mammal surveys in a hazard area within hours or minutes of an event.

[In addition], there are general notifications to the fleet units each whale season and more specific alerts when there are recent reports of marine mammal activity in the region. At these times, participants in PMSR [Sea Range] events are reminded to be particularly vigilant for marine mammal activity, reporting procedures are reviewed and reinforced when marine mammals are sighted. These types of notifications are in addition to the marine mammal surveys required prior to an event. Below are a couple of recent examples of language used for briefings prior to an event:

> October 2020:
> *Large whales are now congregating and foraging along the coast of California. Blue, fin and humpback whales and large aggregations of dolphins may be present in the area of the event. Area-wide requirements apply. The crews of vessels associated with the event must be vigilant for marine mammals when transiting and maintain a safe distance from any marine mammals that are observed - 500 yards from large whales and 200 yards from other marine mammals (excluding bow-riding dolphins). Test managers and test conductors are advised to: 1) Brief all event participants that marine mammals may be present in the vicinity of the event and to be particularly vigilant for whales or large aggregations of dolphins; 2) Remind Naval units to access the Protective Measures Assessment Protocol tool, as required by their respective commands; 3) Ask all participants to report to the control room sightings of large whales and/or large aggregations of marine mammals where surface detonations may occur; 4) Lookouts on the firing vessel should scan an area 1000 yards around intended target(s) carrying live munitions immediately prior to firing; and, 5) Relocate, delay or cease-fire if marine mammals are observed or may swim within 1000 yards of munitions that may detonate at or near the sea surface.*
>
> March 2020:
> *During this time of year, gray whales may be traveling north through the hazard area with most whales traveling within 5-8 miles of shorelines (islands and coast). We received a recent report of increased humpback whale activity in the Santa Barbara channel. This is consistent with usual patterns of increased humpback whale numbers this time of year as whales come to the area to feed. Fin whales are often observed in areas offshore, including the hazard area for this event. It is a little early in the year to be seeing blue whales but they could show up at any time. Remind vessel crews that marine mammals may be present, to be particularly vigilant for large whales and to maintain safe distances when in the vicinity of marine mammals (as described above). Ask all participants to report to the control room sightings of large whales and/or large aggregations of marine mammals. Information on marine mammal activity in the vicinity of events is especially valuable for assessment of risk for*

> *future activities and may be useful should marine mammals be in harm's way during this event.*
>
> The time spent surveying for marine mammals varies with the size of the area being searched. A typical flight would include approximately 1-1.5 hours of search time for an area within 5 miles of the target location. Smaller search areas would require less time. In all cases, multiple passes are made over the target location.
>
> Effort does not change when there have been recent sightings in the general vicinity. In this way, our survey and notification efforts parallel efforts to notify ships to be more vigilant as they traverse designated shipping lanes.

Navy personnel and event managers also consider available sources of recent information regarding whale presence and locations. However, as noted in the following excerpt from correspondence provided to Commission staff in response to an informational request, these data sources can have limited utility due to their focus on portions of the Sea Range in which activities involving explosives are unlikely to be sited (the area around the Channel Islands National Marine Sanctuary, for example) and areas outside the Sea Range such as the Santa Barbara Channel:

> The Navy queries "real-time" whale/dolphin sighting record sources in the days leading up to an event. These include Whale Safe (whalesafe.com), Island Packers marine mammal sightings updated on their website daily (islandpackers.com/marine-mammal-sightings) and any recent reports of cetacean strandings in the local area. Whale Safe focuses on three large cetacean species (blue, humpback and fin whales) whereas Island Packers reports on a broad range of cetacean species they observe.
>
> Unfortunately, these sources of information focus on the Santa Barbara Channel area and are highly biased towards areas where whale watch boats travel (particularly the route between Santa Barbara Harbor and Painted Cave at Santa Cruz Island). The Whale Safe acoustic buoy is located on the north side of Santa Cruz Island favoring whale detections in the Santa Barbara channel and there is a lag time in reporting whale detections based on time needed to upload of data, analysis and quality control (24-48 hours). Aerial surveys conducted by the Channel Islands National Marine Sanctuary are relatively infrequent and target the shipping lanes in the Santa Barbara Channel. The blue whale distribution model used by Whale Safe provides a general view of predicted distributions but it is not updated on a frequency that is useful for day-to-day or even week-to-week predictions.

As additional sources of real-time and near real-time data become available in other portions of the Sea Range, however, the Navy has confirmed that they will continue to be integrated into planning and event management decisions. For example, future deployments of passive acoustic monitoring devices in other portions of the Sea Range may provide greater insights into marine mammal presence within more heavily used

portions of the Sea Range to assist with scheduling and siting of training and testing activities.

In addition, the Navy has also committed to be more transparent in reporting the extent of training and testing activities that are carried out within BIAs. This commitment includes reporting to the Commission, on an annual basis, if any training or testing activities were carried out within BIAs and the number of events held in such areas.

Ship strikes

Collisions with large vessels ("ship strikes") is recognized as the leading cause of death for blue and fin whales, and the second highest source of mortality for humpback whales off of the U.S. West Coast (Carretta et al 2015; Rockwood et al 2017). All three species are recognized as Endangered under the federal Endangered Species Act. Along with gray whales, these are four of the most common whale species found off of the southern California coast and within the Sea Range. The Navy is proposing to carry out 532 training and testing activities per year involving boat and/or vessel operations within the Sea Range. This is estimated to be a roughly 10% increase over baseline levels from previous years.

In the DEIS prepared for the proposed project, the Navy acknowledges the risk ship strikes pose to whales. The DEIS also establishes the high number of ship strikes involving commercial shipping vessels in and around the Santa Barbara Channel and absence of recent or historic incidents involving Navy vessels within the Sea Range[3]:

> In areas of both high whale density and a high volume of commercial vessel traffic, whales are predicted to be susceptible to elevated risk for commercial vessel strike (McKenna et al., 2015; Moore et al., 2018; Rockwood et al., 2017). As detailed in Section 3.0.5.5.1 (Vessel Noise), the existing marine environment in the PMSR [Sea Range] Study Area is dominated by non-Navy commercial vessel traffic into and out of the Ports of Los Angeles and Long Beach (see Figure 3.0-1). As detailed in that section, vessel traffic in the PMSR Study Area is mainly associated with the ports of Los Angeles and Long Beach, which are adjacent to one another, and together form the busiest commercial port in the U.S. and the sixth busiest commercial port traffic in the world (Port of Los Angeles, 2017). Data from the ports of Los Angeles/Long Beach indicate there are on average in excess of approximately 7,000 commercial vessel transits per year associated with visits to just those ports (American Association of Port Authorities, 2017; Port of Los Angeles, 2017; U.S. Army Corps of Engineers, 2017), which does not account for a substantial number of additional commercial vessels transiting the PMSR bound for other major ports.
>
> For recent five year reporting periods, NMFS Technical Memoranda documented 65 vessel strikes to marine mammals off the U.S West Coast (Carretta et al.,

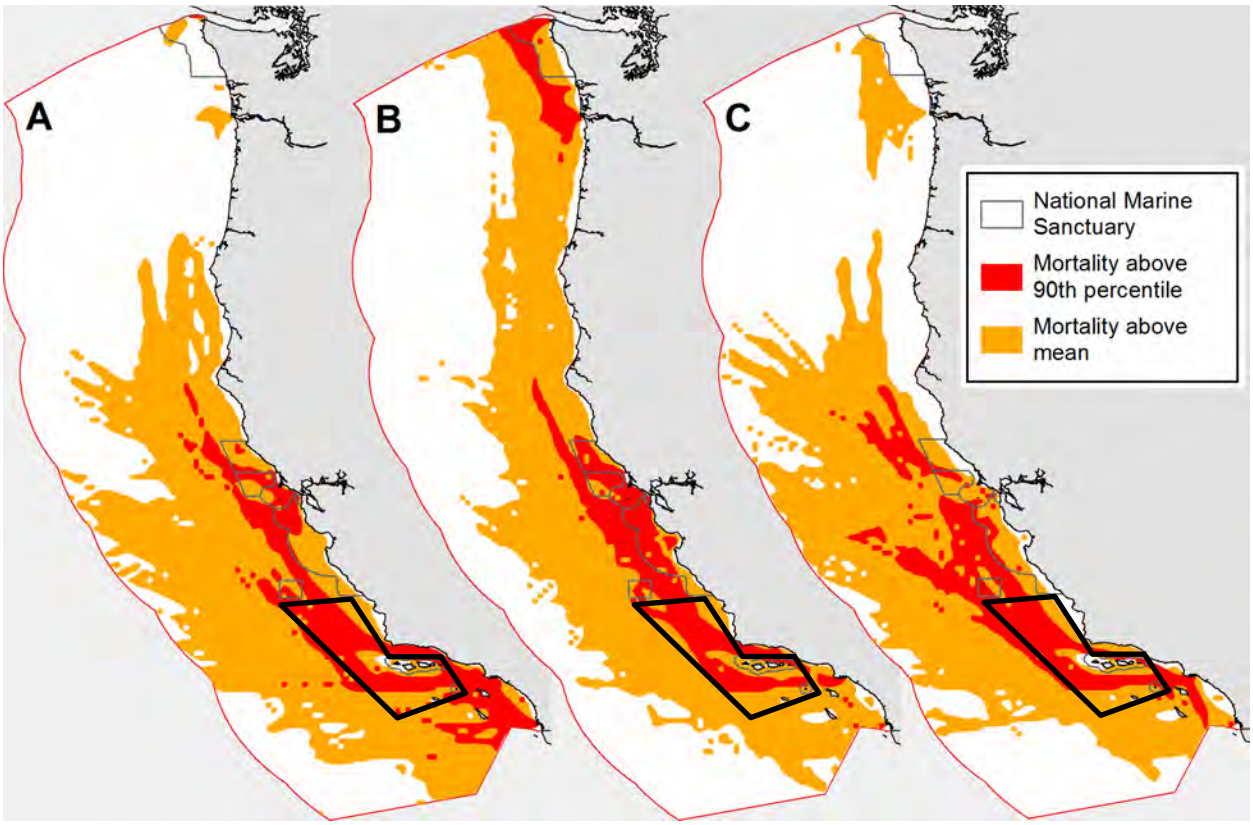
[3] The Navy does, however, note the occurrence of two ship strike events involving fin whales near the Sea Range in 2009. The Navy has noted that these events occurred during transit and normal underway vessel operations.

> 2019a) and approximately 28 vessel strikes to marine mammals in Alaska (Helker et al., 2019). While some risk of a vessel strike exists for all the U.S. West Coast waters, 74 percent of blue whale vessel strikes, 82 percent of humpback whale vessel strikes, and 65 percent of fin whale vessel strikes resulting in mortalities occur in the shipping lanes associated with the ports of San Francisco and Los Angeles/Long Beach (Rockwood et al., 2017).
> …
> Records of Navy vessel strikes have been kept since 1995. Navy policy (Chief of Naval Operations Instruction 3100.6 H) is to report all whale strikes by Navy vessels. By information agreement, the information from those reports has been provided to National Oceanic and Atmospheric Administration and NMFS on an annual basis. Since 1995, only the Navy and the U.S. Coast Guard have been reporting vessel strikes to NMFS in this manner, so all whale strike statistics are skewed by a lack of comprehensive reporting by all non-Navy vessels that may experience vessel strike. In the 24 years of reporting by the Navy, there have been no known Navy vessel strikes to marine mammals in the PMSR Study Area, up to and including the present (April 13, 2020).

The project DEIS also notes that Navy vessels only made up roughly 4% of total vessel traffic offshore of southern California between 2011 and 2015, logging approximately one million ship hours compared to over 27 million by commercial vessels during one monitoring effort.

The project DEIS therefore argues that although the issue of ship strikes is a significant one – particularly in southern California – activities and transits by non-Navy vessels present the largest risk to whales. While true, the Navy is nevertheless proposing a substantial amount of vessel activity within the Sea Range as part of its project. While small in comparison to the amount of commercial shipping traffic the area receives, the 532 proposed activities and operations involving Navy vessels and support boats would still be a large amount in absolute terms.

In addition, portions of the Sea Range that would be used for these Naval activities have been specifically identified as areas in which the risk of ship strike to whales is particularly high for all types of vessels. Specifically, in their comprehensive spatial assessment of ship strike risk to blue, fin and humpback whales across the West Coast, Rockwood et al (2017) found that: (1) the number of ship strike mortalities to these species is likely much higher than is indicated in formal records and observations; and (2) consistent spatial patterns of high risk areas emerge for all three species. The figure below shows in darker orange the areas in which the majority of predicted ship strike mortalities for each species occur and in lighter orange the areas in which 93 to 98% of mortalities occur. In other words, vessel activity within these areas poses the most significant threat to the three whale species. For reference, the general location of the Sea Range in southern California is outlined in black in each figure.



Areas classified as above the study area mean (orange) and greater than the study area 90th percentile (red). Panels depict whale mortality for blue (A), humpback (B), and fin (C). Dashed lines represent the National Marine Sanctuaries.

It is therefore important to help ensure that ship strike risk is minimized in the Sea Range for all vessels and that the focus not rest solely on commercial shipping traffic and shipping lanes (also referred to as Traffic Separation Scheme or TSS). As Rockwood et al (2017) notes in the conclusion of its research findings:

> While strike intensity is high for all three species in both the San Francisco and Southern California TSSs, the combined mortality for these two areas represents just 12% (blue whale), 17% (humpback whale) and 3% (fin whale) of total mortality. While strike intensity is high, the percent of fin whale mortality is minor in both California lanes. For both blue and humpback whales, strike intensity is moderate for the Washington lanes, but due to the small area within the study area, percent mortality is negligible.
> …
> Current efforts to mitigate ship strikes on the west coast are limited to the TSSs in the Southern California Bight and outside the San Francisco Bay Area. Indeed, these areas show the highest intensity of mortality for all three whale species (Table 6). While the relatively small area covered by the TSSs makes them most tractable for regulation, it also means that the proportion of mortality represented is small. Under the hypothetical scenario where 90% of strike mortality was eliminated in all three TSSs, remaining Model 2 mortality would total 16, 18, and 41 deaths for blue, humpback and fin whales, respectively. Therefore, while regulation in shipping lanes is an important component of ship strike mitigation and a logical

> starting place, if limited to the TSSs, even the most successful regulation will not be sufficient to decrease ship strikes to anywhere near PBR levels [levels that would be sustainable].

In the project DEIS, the Navy describes a variety of characteristics of its vessels and their current and proposed operations that would serve to minimize ship strike risk and help account for the lack of ship strike incidents within the Sea Range involving Navy vessels:

> The absence of Navy vessel strikes associated with Navy activities occurring at the PMSR can be attributed to a number of factors related to the differences between Navy vessel design and operation and that of commercial vessels. Table 3.0-11 provides the number of vessels used during the various types of Navy's proposed activities. Activities involving Navy vessel movement would be widely dispersed throughout the Study Area.
> …
> Large Navy vessels (greater than 18 m in length) operate differently from commercial vessels in ways important to the prevention of whale collisions. For example, the average speed of large Navy ships ranges between 10 and 15 knots, and submarines generally operate at speeds in the range of 8 and 13 knots, while a few specialized vessels can travel at faster speeds. By comparison, this is slower than most commercial vessels where normal design speed for a container ship is typically 24 knots (Bonney & Leach, 2010)… Differences between most Navy ships and commercial ships also include the following disparities:
>
> • The Navy has several standard operating procedures for vessel safety that could result in a secondary benefit to marine mammals through a reduction in the potential for vessel strike. For example, ships operated by or for the Navy have personnel assigned to stand watch at all times, day and night, when moving through the water (i.e., when the vessel is underway). Watch personnel undertake extensive training in accordance with the U.S. Navy Lookout Training Handbook or civilian equivalent. A primary duty of watch personnel is to ensure safety of the ship, which includes the requirement to detect and report all objects and disturbances sighted in the water that may be indicative of a threat to the ship and its crew, such as debris, a periscope, surfaced submarine, or surface disturbance. Per safety requirements, watch personnel also report any marine mammals sighted that have the potential to be in the direct path of the ship, as a standard collision avoidance procedure. As described in Section 5.3.4.1 (Vessel Movement) of this EIS/OEIS, Navy vessels are required to operate in accordance with applicable navigation rules…These rules require that vessels proceed at a safe speed so proper and effective action can be taken to avoid collision and so vessels can be stopped within a distance appropriate to the prevailing circumstances and conditions. In addition to complying with navigation requirements, Navy ships transit at speeds that are optimal for fuel conservation, to maintain ship schedules, and to meet mission requirements. Vessel captains use the totality of the circumstances to ensure the vessel is traveling at appropriate speeds in accordance with navigation

rules. Depending on the circumstances, this may involve adjusting speeds during periods of reduced visibility or in certain locations.
• Many Navy ships have their bridges positioned closer to the bow, offering good visibility ahead of the ship.
• There are often aircraft associated with the training or testing activity, which can detect marine mammals in the vicinity or ahead of a vessel's present course.
• Navy ships are generally much more maneuverable than commercial merchant vessels if marine mammals are spotted and it becomes necessary to change direction.
• Navy ships operate at the slowest speed possible consistent with either transit needs, or training or testing need. While minimum speed is intended as a fuel conservation measure particular to a certain ship class, secondary benefits include being better able to spot and avoid objects in the water, including marine mammals.
• In many cases, Navy ships will likely move randomly or with a specific pattern within a sub-area of the Study Area for a period of time, from one day to two weeks, as compared to straight line point-to-point commercial shipping.
• Navy overall crew size is much larger than merchant ships, allowing for more potential observers on the bridge.
• When submerged, submarines are generally slow moving (to avoid detection), and therefore marine mammals at depth with a submarine are likely able to avoid collision with the submarine. When a submarine is transiting on the surface, there are Lookouts serving the same function as they do on surface ships.
• The Navy will implement mitigation to avoid potential impacts from vessel strikes on marine mammals (see Chapter 5, Standard Operating Procedures and Mitigation). Mitigation includes training Lookouts and watch personnel with the Marine Species Awareness Training (which provides information on sighting cues, visual observation tools and techniques, and sighting notification procedures), requiring vessels to maneuver to maintain a specified distance from marine mammals during vessel movements.
• The Navy will continue to issue a seasonal awareness notification message for Navy ships and aircraft operating in SOCAL to alert them to the seasonal increased presence of concentrations of large whales, including blue, gray, or fin whales as follows: Blue Whale (June–October), Gray Whale (November–March), and Fin Whale (November–May). To maintain safety of navigation and to avoid interactions with large whales during transits, the message instructs vessels to remain vigilant to the presence of large whale species, that when concentrated seasonally, may become vulnerable to vessel strikes. Platforms will use the information from the awareness notification messages to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of procedural mitigation. This Navy message is also consistent with a message issued by the U.S. Coast Guard for vessels operating in the 11th district (covering the waters in and around the PMSR) as a Notice to Mariners that also informs operators about the presence of populations of endangered blue, humpback, and fin whales in the area (see U.S. Coast Guard (2019) for further details).

Among these measures, the use of slow vessel speeds – particularly those at or below 10 knots – would be expected to provide some of the greatest benefits in terms of reducing ship strike risks. As the Commission found in its 2018 Consistency Determination for the California portion of the Navy's Hawaii-Southern California Training and Testing Program (CD-0001-18):

> The relationship between vessel speed and the likelihood and consequences of collisions with large whales has been closely evaluated in recent years as a result of the significant threat posed by ships to the highly endangered North Atlantic right whale and the series of ship strike mortalities recorded within the Santa Barbara Channel in 2007 (five blue whale mortalities from ship strikes within two months). This research has shown that a 10-knot speed limit reduced the risk of fatal ship strikes to right whales by 57% (Wiley et al. 2011) and that generally, vessel speed restrictions reduced total ship strike mortality risk levels to whales by 80–90% (Conn and Silber 2013).

In its November 4, 2020 letter to Commission staff recommending certain conditions of concurrence be considered (**Exhibit 5**), the Natural Resources Defense Council (NRDC) also highlights the importance of vessel speed reduction as a risk minimization strategy, particularly in areas of expected high fin whale density in the deeper seaward portions of the Sea Range:

> Given the localized residency and the tendency of fin whales to congregate, restrictions related to vessel speed constitute an important mitigation measure that has not adequately been analyzed in the Navy's DEIS or consistency determination, and could contribute to effective mitigation of harm to fin whales, both as a result of reduced noise and reduced ship-strike risk.

Commission staff evaluated and asked the Navy to consider the feasibility and potential benefits of implementing additional measures to reduce ship strike risk, including general or seasonal speed limits for Navy vessels and speed limits for certain types of activities (transits to and from training and testing areas, during towing operations, and during activities at night or during inclement conditions). In response, the Navy further emphasized the differences between its operations on the Sea Range and those commercial shipping vessel activities known to be responsible for numerous whale mortalities in recent years. In addition, the Navy also described how the low speeds used by Navy vessels during most of their operations within the Sea Range were already largely consistent with a ten knot speed limit. For example, the median surface speed of two of the classes of vessels used on the Sea Range from 2011 through 2015 was below 12 knots. Considering this median speed includes those training and testing operations that require elevated speeds, its level slightly above ten knots indicates that Naval vessels typically operate at speeds that would be expected to substantially reduce ship strike risk. The Navy has indicated that this would continue with implementation of the proposed project.

Although a more firm adherence to a ten knot vessel speed limit when faster speeds are not required for operational or training and testing needs would undoubtably reduce ship strike risks further, the low speeds proposed to be used by Navy vessels during typical operations within the Sea Range would be combined with the other measures the Navy is proposing to implement to minimize ship strike risk (including the use of vessel and aerial lookouts, seasonal notifications, and marine species awareness training for vessel personnel). Based on the low number of ship strike incidents involving Naval vessels within the Sea Range, these types of measures have been shown to be effective since the Navy began recording and reporting ship strike incidents to the National Marine Fisheries Service (NMFS) in 1995 and are expected to continue to minimize ship strike risk.

In addition to implementing these measures, the Navy is also continuing to carry out a Lookout Effectiveness Study to evaluate the performance of Navy personnel in spotting marine mammals relative to professional marine mammal observers (MMOs). The results from past years of this study consistently show that the vast majority of marine mammal observations made by MMOs are missed by Navy Lookouts.[4] The results of the ongoing Lookout Effectiveness Study should continue to be used by the Navy to help identify needs and opportunities for enhancing the abilities of Lookouts to detect marine mammals – including through revisions and improvements to the marine species awareness training module provided to all Navy Lookouts and through the integration of additional data sources of observation tools (such as infrared instruments and passive acoustic listening devices that can aid in determining marine mammal presence). Such efforts appear to have been made by the Navy following two ship strike incidents in southern California in 2009 in the form of an update to Lookout training protocols and appear to be needed once more as Lookouts continue to be significantly outperformed by more trained and experienced MMOs. While activities within the Sea Range often have the benefit of Lookouts and personnel carrying out monitoring duties both on vessels and simultaneously on aircraft – thus increasing observer coverage and success, efforts to improve the effectiveness of Navy Lookouts would nevertheless serve to enhance this impact avoidance and minimization measure. The Navy has not provided a firm commitment to implement any specific strategies for improving the effectiveness of its Lookouts but has confirmed that as new techniques, information sources and methods become available, they will be considered and integrated when practical.

Finally, the Navy has also agreed that if a ship strike incident occurs in the Sea Range in the future and a report is submitted to NMFS (currently the standard protocol), the Commission will also receive a copy of the report. This effort to further increase transparency and strengthen the Navy's partnership with the Commission on resource protection would provide a valuable supplement to the Navy's other efforts to reduce the

[4] The Commission's adopted findings in support of its decision on the Navy's most recent consistency determination for its training and testing program for the SOCAL Range Complex (CD-0001-18) discuss these past results in additional detail – available here: https://documents.coastal.ca.gov/assets/marine-acoustics/1%20CD-0001-18%20CD%20Navy%20HSTT%20Adopted%20Findings.pdf

risk of ship strikes within the Sea Range (low vessel speeds, avoidance of areas of expected high whale density, and continually evolving training for Lookouts).

NRDC Recommendations

The Natural Resources Defense Council (NRDC) has a long history of careful review of Navy operations and activities and has been the primary interested party involved in most of the Commission's past federal consistency reviews of at-sea operations in southern California. NRDC has been involved in the NEPA process for the proposed project and submitted a letter to Commission staff on November 4, 2020 (included as **Exhibit 5**) outlining its recommendations:

> In view of the projected increase in Navy activity and its impacts on endangered baleen whales and other marine mammals, we respectfully recommend that the Commission conditionally concur with the Navy's Consistency Determination, setting the following conditions:
>
> (1) The exclusion of Navy testing and training activities from all current designated Biologically Important Areas on the Point Mugu range, with a reopening of consistency review should an upcoming assessment by NMFS modify the existing areas;
>
> (2) The adoption of measures to reduce ship-strike risk of fin whales, in areas of seasonally high fin whale concentrations (i.e., the 200 to 1000m isobath in Southern California, during the months of November through February); and
>
> (3) The development and implementation of an effective dynamic monitoring-and-mitigation system, including (1) the design of a monitoring system that utilizes both Navy and extramural data sources and provides, at minimum, robust passive acoustic monitoring; (2) the publication of a full and transparent mitigation protocol, specifying command chains and real-time actions; and (3) a timely assessment of the system's effectiveness, with results made available to the Coastal Commission and the public.

NRDC's letter provides background and explanations for each of these recommended conditions and was carefully considered by Commission staff, shared with the Navy and used by Commission staff to help inform its discussions with the Navy. As described in prior sections of this report, the Navy opposes implementation of additional adverse impact avoidance, minimization or mitigation measures, including those recommended by NRDC. The Navy's general position is that it is confident in the success and effectiveness of the measures it currently employs and there has consistently been a lack of direct evidence of harm to marine mammals due to Navy activities within the Sea Range.

Through discussions with Commission staff, however, the Navy has provided clarifications to its proposal that are responsive to some of the conditions that NRDC recommends. For example, the Navy has demonstrated that most of the BIAs in the

Sea Range are rarely used for logistical and human health and safety reasons and that the typical operational speeds used by Navy vessels in the Sea Range are close to or below the 10 knot limit that has been identified as an important ship strike risk reduction measure. The Navy has also expressed its willingness to integrate new tools and data sources for tracking marine mammal presence and density as they become available and committed to providing the Commission with additional information in the future to further demonstrate and reinforce these aspects of its operations (including an annual report of activities carried out within BIAs and reports of any future ship strike incidents that occur with Navy vessels in the Sea Range).

Although these steps are meaningful, they do fall short of NRDC's recommendations and several of the items Commission staff asked the Navy to consider and implement. The weight the Navy places on direct evidence of harm or injury to marine mammals as a trigger for implementing additional protective measures is a logical but challenging aspect of the Commission's review of Navy at-sea activities (including the proposed project and past reviews of training and testing on the SOCAL Range such as the most recent Consistency Determination, CD-0001-18). The challenge is mainly associated with the difficulty of visually observing or documenting injured and dead marine mammals at sea. In their recent study evaluating ship strike risks to whales along the West Coast, Rockwood et al (2017) explore and discuss this issue. In the excerpt below, the focus is on mortality due to ship strike but the concept that deceased whales have a low probability of being seen would also apply to other sources of mortality as well. In this excerpt, the numbers in brackets refer to citations to previous research:

> Because of whales sinking, ocean currents and carcass decomposition, the rate of recovery for struck whales is very low. Recovery rates specific to blue, humpback and fin whales are unknown, so proxies from other species must be used.
>
> Carcass recovery rates have been estimated for various cetacean species including 17% [61] for right whales, 6.5% for killer whales [62], <5% for grey whales [63], and 3.4% for sperm whales [34]. Right whales are the most buoyant whale species and thus provide a conservative limit scenario for extrapolation [64,65]. Sperm whales have been shown to have negative tissue buoyancy, but positive total buoyancy near the surface [66] so that recovery rates of sperm whales depend on lung inflation upon mortality with whaling records indicating that most float at death [64]. In contrast, blue whales appear to be negatively buoyant at or near the surface given that gliding decent begins at relatively shallow depths [67]. Thus, sperm whales (which have the lowest recovery rate) as well as grey whales are more likely than blue whales to float when deceased [64,65,68]. To produce an improved recovery estimate relative to the right whale rate, we use the average of the sperm, grey, and killer whales. Given that the available evidence [36,64-66,68] suggests the buoyancy of the study species is similar (humpbacks) or less (blue and fin) than these species, this `best' estimate provides a better proxy. Using a high recovery rate of 17% to produce minimum strike estimates and 5% recovery (the mean of grey, killer and sperm whales) as a best estimate, we extrapolated ship strike mortality from 2006-2016 stranding data (Table 2). The blue whale stranding rate of

1.0 whales/yr. extrapolates to minimum 5.9 mortalities with a best estimate of 20. There were an average of 1.4 humpback strike strandings per year during the last decade, which extrapolates to a minimum 8.2 and best estimate 28 deaths. Fin whales had 1.1 strike strandings per year, leading to minimum 6.4 and best estimate of 22 deaths by extrapolation.

This research is likely, however, to misrepresent the probability of the Navy detecting marine mammal mortalities that may be associated with ship strikes or the use of explosives. This is because Naval vessels are smaller and more likely to detect a collision with a whale and respond to it with an active search (as compared to commercial shipping vessels that are much larger and have been observed unknowingly transporting struck whales into port across their bows). Additionally, one of the Navy's standard measures following the use of explosives at sea is to visually observe the target area. As specifically described in the DEIS:

- When practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), observe the vicinity of where detonations occurred; if any injured or dead marine mammals or ESA-listed species are observed, follow established incident reporting procedures.

- If additional platforms are supporting this activity (e.g., providing range clearance), these assets will assist in the visual observation of the area where detonations occurred.

Implementation of these measures would significantly increase the probability of detection for marine mammal mortalities or serious injuries associated with Navy activities. Given how low that probability can be, (5 to 17%, based on the best available research), however, even a significant increase could still result in mortality incidents going undetected. At this time there remains no direct evidence of harm or indication that such events are indeed going undetected. Accordingly, the Navy retains its position that implementation of additional protective measures for marine mammals is unnecessary and the potential impediment to its operations that those measures may result in is not justified.

Therefore, Commission staff have taken a different approach than to recommend a conditional concurrence that includes conditions such as those recommended in NRDC's letter. Instead, Commission staff worked to engage the Navy to establish more transparency and reporting regarding the locations not used for training and testing activities involving explosives and gunnery exercises as well as to help ensure that the Commission would be notified of any direct evidence of a ship strike incident involving a Navy vessel on the Sea Range. Further, the Commission continues to raise concerns about the efficacy of vessel-based Lookouts and to encourage the Navy to actively work to address this issue, in particular due to the heavy reliance the Navy places on visual observers/Lookouts as an adverse impact mitigation strategy.

Conclusion
Despite several of the proposed project's shortcomings, the Commission concludes that the project is consistent with the marine resources and water quality policies (Sections 30230 and 30231) of the Coastal Act. This conclusion is based on the following factors, described in detail above: (1) the proposed project has a limited potential to adversely affect water quality; (2) includes measures to offset the marine debris it would generate; (3) would not include training and testing activities involving the use of explosives or gunnery exercises within the Santa Barbara Channel and most of the Sea Range's waters identified as Biologically Important Areas for marine mammals; (4) the Navy will implement avoidance and minimization measures to minimize the likelihood of impacts to marine mammals from ship strikes and the use of explosives; and (5) the Navy committed to annual reporting of training and testing activities within BIAs and incident reporting of ship strike events.

D. Cultural Resources

Section 30244 of the Coastal Act states:

> Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

The Navy's evaluation of the proposed project's potential to affect cultural resources is primarily focused on activities that would be carried out on San Nicolas Island (SNI), a long-term component of the Sea Range that supports a wide range of facilities and activities. The Navy proposes to continue its current level of activity on SNI and is not proposing any new construction-related activities. Thus, the Navy is not proposing changes to the type or tempo of operations at SNI from what the Commission has previously analyzed.

San Nicolas Island has a long history of human use that pre-dates the Navy. As stated in the project's EIS:

> Archaeological evidence indicates that beginning at least 13,000 years ago, Native Americans hunted, fished, and gathered shellfish on the islands. They also participated in an elaborate trading network between islands and the mainland through the use of canoes.
> …
> SNI has been the subject of archaeological investigations for at least 100 years, including a complete archaeological survey of the island. During these archaeological investigations, 584 archaeological sites have been recorded across the island. These include kitchen middens, food processing sites, stone quarry sites, burial sites, petroglyph sites, and village areas. Of the 584 sites, 1 site has been formally determined eligible for listing to the NRHP (CA-SNI-169), 1 site has been formally determined not eligible for the NRHP (CA-SNI-170), and 583 sites are unevaluated and potentially eligible [math error in original] (U.S. Department of

> the Navy, 2019). Many of the other archaeological sites on SNI have preliminary eligibility recommendations. Human remains have been recovered from across the island as well as from the sites on the western end of SNI (U.S. Department of the Navy, 1998).

The Navy's consistency determination summarizes its proposed and ongoing activities on SNI as follows:

> For SNI, the Navy proposes the continued use of the Land Impact Site, a 10.5-acre target area located on the northwest corner of the island and historically associated with the Standoff Land Attack Missile (SLAM) testing program. The Land Impact Site is used for air-to-surface tests using inert weapon systems. Targets in the area may include empty Container Express (commonly known as CONEX) boxes configured to simulate buildings, helicopter or aircraft bodies, and other constructed simulated targets. The Land Impact Site is the only active impact site on SNI and has been in use since 1989. The proposed tempo for the continued use of the Land Impact Site will not exceed what was previously analyzed in the 1998 EA for Non-warhead SLAM and Future Model SLAM Firings, approximately 8–26 times annually (U.S. Department of the Navy, 1998). In addition, the Navy proposes the continued use of the existing Alpha Launch Complex and the Building 807 Launch Complex. The Alpha Launch Complex is typically used for launching the GQM-163A supersonic target and the Building 807 Launch Complex is used to launch both targets and missiles. The proposed tempo for the use of the launch complexes would not exceed what was previously analyzed in the 2002 PMSR EIS/OEIS, approximately 40 launches annually (U.S. Department of the Navy, 2002). Lastly, the Navy proposes to conduct testing activities associated with the DE facility on SNI. Construction and use of the DE facility (Shooter Site, Target Site, and Calibration Sites) on SNI were previously analyzed in the 2015 DE Test Facility at SNI EA (U.S. Department of the Navy, 2015a). There is no change in tempo proposed for DE activities on SNI from what was analyzed in the 2015 EA for the DE facility of approximately 125 days/year.

The Navy's consistency determination also describes its current and past evaluations of the effects of these activities on the island's cultural resources:

> Air-to-surface operations include the use of the Land Impact Site, which overlays archaeological resources on SNI. The Land Impact Site has been in use since 1989. As mentioned above, the Navy conducted archaeological investigations of sites within the APE [Area of Potential Effects] of the Land Impact Site. Portions of CA-SNI-168 within the Land Impact Site were mitigated by a data recovery program [research] conducted in compliance with federal standards (U.S. Department of the Navy, 1998). After initial evaluations of sites within the Land Impact Site APE, the Navy consulted with the SHPO [State Historic Preservation Officer] to mitigate anticipated effects to CA-SNI-168 from the creation and operation of the Land Impact Site. The mitigation was data recovery. No tribes were consulted at that time since no tribe was known to have attached religious and cultural significance to

historic properties on SNI. The Navy developed procedures to avoid or minimize potential adverse effects to other portions of the site not subject to the data recovery efforts. Portions of another archaeological site, CA-SNI-169, are also located within the Land Impact Site's APE. Archaeological sampling at site CA-SNI-169 was conducted in 1997 and the site was also recommended as NRHP eligible (U.S. Department of the Navy, 1998). Protection procedures for sites CA-SNI-168 and CA-SNI-169 were detailed in the 1998 EA for the SLAM site (U.S. Department of the Navy, 1998). Protection procedures included conducting archaeological monitoring of corrective cleanup actions following a test to minimize effects to archaeological sites. Based on the analysis in the EA, the Navy determined that the continued use of the facility would not have an adverse effect on the site (U.S. Department of the Navy, 1998).

The SNI ICRMP [Integrated Cultural Resource Management Plan] contains guidance for complying with the NHPA [National Historic Preservation Act] and Native American Graves Protection and Repatriation Act, and includes standard operating procedures for the inadvertent discovery of cultural resources (see Appendix A, Summary of Standard Operating Procedures and Mitigation Measures, for details on these procedures). Combined, the guidance and procedures are intended to minimize effects to terrestrial cultural resources on SNI, including those near the Land Impact Site (i.e., SNI-168 & SNI-169) (U.S. Department of the Navy, 2019b). The Proposed Action would not change the frequency or type of missile and target activity. Therefore, with continued compliance with the ICRMP and the standard operating procedures and measures (Appendix A, Summary of Standard Operating Procedures and Mitigation Measures), the Proposed Action would not adversely affect cultural resources and impacts on cultural resources on SNI would be less than significant.
…
At SNI, aerial target launches occur at the existing Alpha Launch Complex and the Rock Crusher Launch Site, which is typically used for launching the GQM-163A supersonic target. The Rock Crusher Launch Site is used to launch both targets and missiles. These launch complexes would continue to be used for their current purposes and maintained appropriately. Known cultural resources adjacent to the Alpha complex were determined not eligible for inclusion in the NRHP (Byrd et al., 2014).

The DE Test Facilities EA identified potential impacts to prehistoric archaeological resources (CA-SNI-12) (U.S. Department of the Navy, 2015a). Project construction plans were redesigned and evaluated in an EA, which determined that there would be no impacts to the archaeological site associated with DE testing and personnel training. The SHPO concurred with the findings (U.S. Department of the Navy, 2015a). While the Navy would continue use the DE Test Facility for surface-to-surface testing activities; no changes to the activities previously analyzed in the DE Test Facilities EA are proposed. Therefore, the Proposed Action would not adversely affect cultural resources from surface-to-surface operations.

The Navy's efforts to reach out to and consult with potentially affected Native American Tribes as part of the proposed project are summarized in its consistency determination as follows:

> [A]ctions within the Sea Range shall be reviewed through the standard Section 106 process to ensure NHPA [National Historic Preservation Act] compliance, including consultation with SHPO [the State Historic Preservation Officer], tribes, and other parties as appropriate to determine the appropriate actions. The Navy has notified seven federally recognized tribes of the Proposed Action: La Jolla Band of Luiseño Indians, Pala Band of Mission Indians, Pauma Band of Luiseño Indians, Pechanga Band of Luiseño Indians, Rincon Band of Luiseño Indians, Santa Ynez Band of Chumash Mission Indians, and Soboba Band of Luiseño Mission Indians. The Navy also notified 20 non-federally recognized tribes of the Proposed Action, and as recommended in the Sacred Lands search results provided by the Native American Heritage Commission. Two of the federally recognized tribes, the Pechanga Band of Luiseño Indians and the Rincon Band of Luiseño Indians, requested government-to-government consultation with the Navy and, consultation began on July 25, 2020. Past consultation efforts on SNI include consultation with SHPO resulting in the Navy mitigating site effects through data recovery, and consultation with the Pechanga Band of Luiseno Indians, which led to the Navy identifying two additional cultural resources with the potential of being historic properties. The Navy will continue Section 106 consultation regarding the consideration of SNI as a Traditional Cultural Property (TCP) eligible for inclusion in the National Register of Historic Places (NRHP) and the archaeological district as eligible for the NRHP.
> …
> The proposed increase in testing and training activities does not apply to activities occurring on SNI or the nearshore areas of SNI. Additionally, the Proposed Action does not include the use of explosives on SNI, nor are there any impact (target) areas close to shore or at the water's edge where submerged archaeological sites might be present. The only submerged cultural resources identified within the action area are historic shipwrecks and military aircraft.
>
> During consultation for another undertaking on SNI, the Pechanga Band of Luiseno Indians' Cultural Resources Department provided information to the Navy identifying two cultural resources with the potential of being historic properties. These two potential historic properties are a TCP and an archaeological district. Pechanga Band of Luiseño Indians asserted that the TCP includes the entire island and that each archaeological site on the island is a contributing element to the overall archaeological district. In response to Pechanga Band of Luiseño Indians' identification of these potential historic properties, the Navy is preparing to contract both an ethnographic study and archaeological district study of SNI to identify and define the nature of both property types. Until such time as these studies are completed, the Navy will follow standard procedures set forth in Section 106 of the NHPA and consult as appropriate. The Navy has indicated that, as requested by the Pechanga Band of Luiseño Indians, it would withhold from public disclosure any information about such resources, pursuant to C.F.R. 800.11(c)(1).

The Commission's review of potential effects to cultural resources on SNI has limitations because SNI is federal property and therefore not part of California's Coastal Zone. Therefore, the material components of the tribal and cultural resources, including artifacts, physical sites, and burials, are also outside of the Coastal Zone. This introduces the question of if they can be considered California coastal resources subject to the Commission's federal consistency review authority. However, the Pechanga Band of Luiseño Indians assert that the resources on SNI are part of a larger archeological district and Traditional Cultural Property that spans the entire Island, and further, is part of a larger network of the historical tribal landscape that extends beyond the island to encompass other sites on the other Channel Islands and mainland coast. Thus, adverse impacts to one or more individual sites located on the federal land of SNI can affect a larger network of resources – the bulk of which are located within the Coastal Zone. In this way, those adverse impacts on SNI could be considered to have "spillover effects" on California coastal resources and thus be subject to Commission review under its federal consistency authority. In its objection to the consistency certification (No. CC-018-07) for the TCA Toll Road project on a portion of the Camp Pendleton Marine Base – also federal property – the Commission supported this approach. In its adopted finings, the Commission found that effects to cultural resources on federal property would affect associated cultural resources within the Coastal Zone and therefore have "spillover effects" that allowed them to be considered California coastal resources that qualify for evaluation and protection by the Commission.

As part of its review of the Navy's proposed activities, Commission staff reached out to both the Pechanga Band of Luiseño Indians and the Rincon Band of Luiseño Indians. This outreach resulted in a conference call with representatives of the Pechanga Band of Luiseño Indians (Pechanga Band) as well as collaboration on the following summary of the discussion. During this call representatives of the Pechanga Band conveyed to Commission staff that the Pechanga Band feels strongly that the ethnographic study and archeological district study referred to above need to be completed and the results provided to the Pechanga Band for consideration prior to the completion of the current NEPA process and Section 106 and government-to-government consultations. The Pechanga Band conveyed its belief that the information from these studies is essential to an accurate assessment of the proposed project's potential to adversely affect cultural resources on San Nicolas Island. Further, the Pechanga Band shared with Commission staff its view that the studies will help inform San Nicolas Island's placement within the greater context of a Traditional Cultural Property, and being part of Traditional Cultural Landscape, and add a critical layer to the evaluation of the Navy project's potential impacts to cultural resources. The Pechanga Band finds San Nicolas Island to meet National Register eligibility at a TCP, TCL and an archaeological district and expressed its concern that without this greater context, the Navy's evaluation would be focused solely on discrete individual sites and would not appropriately consider cumulative effects and the gradual erosion of San Nicolas Island's significance and value as a cultural landscape or, property, and as an archeological district. The Pechanga Band has also expressed concerns that the studies will not be completed in a

timely manner and the Navy's commitment to carry them out may go unfulfilled. However, the Pechanga Band informed Commission staff that on November 17, 2020, the Navy committed to re-engaging Section 106 consultation to review the proposed project's impacts to cultural resources more fully.

In response to a request from Commission staff regarding the status and timeline for the studies, the Navy stated on November 9, 2020 that:

> After considerable coordination with federally recognized Tribes, both studies had to be contracted and the contract award dates were on or near 30 Sep 2020. The archeological district study has been started; the ethnographic study is set to start by the end of this month. Given the intense nature of the studies and the research timelines and tribal involvement planned for each, we do not anticipate the studies being completed before the end of fiscal year 2021 (September 2021). The results of the studies will be used to inform future NEPA, future Section 106 consultations and future G2G [government-to-government] consultations.

The Navy's rationale for not including the study results in the current NEPA and consultation processes is that those processes have already been initiated and are on track to be completed before the study results are expected to be available (the studies are expected to take two years). Specifically, the Navy stated in correspondence to Commission staff dated November 12, 2020 that:

> [T]he consistency determination for PMSR [Point Mugu Sea Range] is nearly 20 years old. It was prepared to support the EIS, which is also nearly 20 years old. Due to the age of existing environmental impact analysis, regulatory permitting requirements to support National Marine Fishery Services' letter of authorization under the Marine Mammal Protection Act as well as new activities conducted on the PMSR since the 2002 EIS was completed, a new EIS and consistency determination is required. Of note, these newer activities were the subject of Environmental Assessments completed for the PMSR and were consulted upon as appropriate. The Proposed Action combines these activities into a comprehensive EIS. The current project schedule supports a Final EIS and Record of Decision next summer [or early Fall] based on the best available data we have at the time. The schedule for ethnographic and archeological survey completion notated below does not appear to meet the project timeline. Should the survey results indicate new information that would have the potential to change any of the decisions made in the FEIS or other regulatory consultations such as Section 106, new impact analysis would be completed at that time.

The Commission agrees with the Pechanga tribe that information provided by the requested studies is likely to give important context to the Navy's assessment of impacts on tribal and cultural resources from proposed activities and operations on SNI. The study results may also help establish SNI's regional significance and help inform the connection it has with the mainland California coast and cultural sites located there. This is particularly important due to the large number of recorded cultural resource sites

on SNI that have yet to be fully evaluated and may be eligible for listing on the National Register of Historic Places (583 of 584 sites are described in the Draft EIS as "unevaluated and potentially eligible"). The Commission therefore urges the Navy to consider the Penchanga Band's request to wait until the requested studies are complete before finalizing the current NEPA process. Based on its recent decision to re-start the Section 106 consultation process with the Pechanga Band, the Navy appears to be actively working to address the Pechanga Band's concerns and request.

Additionally, the Navy has communicated with staff its understanding that these studies could reveal new information that would necessitate new impact analyses, Tribal consultations, and federal consistency review. Thus, the Navy has committed to report back to the Commission within two years with the results of both studies. This timeline is based on the expected duration of the studies and their availability. This commitment helps address the Pechanga Band's concern that the studies will not be completed in a timely manner and also provides an opportunity for the Commission to evaluate the study results to determine if they provide new information relevant to the Commission's federal consistency review. If the studies do provide new information related to cultural and tribal resources that are relevant to the Commission's federal consistency review, the Commission may re-open its federal consistency review, as provided in Section 930.46 of Title 15 of the Code of Federal Regulations.[5]

Based on the information currently available, however, the Commission agrees with the Navy that the proposed project is consistent with the cultural resource policy of the Coastal Act. The Navy is implementing reasonable mitigation measures for activities carried out on SNI, including the use of Tribal cultural monitors during ongoing construction activities (authorized independently from the proposed project) and, in addition to funding the ethnographic study and archeological district study, is currently developing a Tribal Consultation Protocol Agreement in collaboration with affected Tribes to guide future Tribal consultations. Further, the Navy is working to convene a meeting in the Spring of 2021 between the Tribal Chairs of affected Tribes and the Commanding Officer with authority over Naval activities within the Sea Range.

For these reasons, the Commission concludes that the proposed project is consistent with Coastal Act Section 30244.

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[5] 930.46 Supplemental coordination for proposed activities.
(a) For proposed Federal agency activities that were previously determined by the State agency to be consistent with the management program, but which have not yet begun, Federal agencies shall further coordinate with the State agency and prepare a supplemental consistency determination if the proposed activity will affect any coastal use or resource substantially different than originally described. Substantially different coastal effects are reasonably foreseeable if:
(1) The Federal agency makes substantial changes in the proposed activity that are relevant to management program enforceable policies; or
(2) There are significant new circumstances or information relevant to the proposed activity and the proposed activity's effect on any coastal use or resource.
(3) Substantial changes were made to the activity during the period of the State agency's initial review and the State agency did not receive notice of the substantial changes during its review period, and these changes are relevant to management program enforceable policies and/or affect coastal uses or resources.

E. Coastal Access and Recreation

Section 30210 of the Coastal Act states:

> In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211 of the Coastal Act states:

> Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212 (a) of the Coastal Act states:

> a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:
>
> > (1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, ….

Section 30213 of the Coastal Act states:

> Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided.

Section 30220 of the Coastal Act states:

> Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

The Point Mugu Sea Range includes shoreline areas on San Nicolas Island and at Naval Base Ventura County Point Mugu. As has been the case since they began to be used by the Navy many decades ago, access to these active military installations is currently limited to Navy personnel and others with appropriate authorization. No changes to these access restrictions are proposed as part of the project.

The proposed project, however, may result in changed access to ocean waters for recreation. As has historically been the case, Navy testing and training activities necessitate clearance of non-military boats and personnel (including both commercial and non-commercial activities) from the Sea Range for safety purposes. Clearances are typically up to eight hour events, and they most commonly occur within a radius of

10-20 miles around San Nicolas Island. To minimize disruptions, the Navy currently conducts several public notification procedures prior to test and training events, including publishing Notice to Mariners for, among other things, sport boats bringing recreational fishermen, divers, or tourists to the waters surrounding San Nicolas Island and other parts of the Sea Range. The Navy states:

> The PMSR [Point Mugu Sea Range] is used by Navy vessels and other recreational boaters. Navy testing and training activities would be coordinated, via a Notice to Mariners (NTM), 24 hours in advance of Navy activities. In addition, daily Very High Frequency (VHF)-FM Marine Radio (Channel 16) would be broadcast to notify recreational boaters and the public of any range closures associated with testing and training activities. For recreational fishing and boating, the testing and training activities could result in closures of SNI to the public during launch events conducted from SNI (up to 40 per year). However, these are likely to be partial area closures, so boats can move to another area near SNI to recreate without leaving the area entirely. In most years, the Navy has only conducted an average of four to eight launches from SNI (U.S Department of the Navy, 2018a). Testing and training activities are not conducted until vessels are clear of the area in accordance with the range clearance procedures. Additionally, most recreational boaters are typically in nearshore areas of Ventura and Santa Barbara Counties and would not likely be in the clearance area prior to a testing and training activity. Recreational activities in the PMSR include hook-and-line fishing and scuba diving. These activities also occur primarily in shallow waters near the coastline and from private and chartered commercial passenger fishing vessels.
> …
> The proposed Navy testing and training activities would increase the frequency of temporary limited access to existing areas that are currently subject to limited access; no new restricted areas are proposed. Recreational activities that occur in the Action Area include recreational fishing, tourism, diving, surfing, swimming, hiking, camping, boating, and kayaking. Temporary closures of portions of the Action Area for security and safety do not limit public access to adjacent areas. Areas are only closed for the duration of the activity and are reopened at the completion of the activity.
>
> The Proposed Action would affect coastal uses by temporarily limiting access to marine areas in the PMSR for recreational users and the public. The Navy has coexisted with other users in the air and water of the PMSR for decades without significant impacts on recreational activities. For safety reasons, Navy testing and training activities can occasionally limit recreation access to nearshore and offshore water in the PMSR (U.S. Department of the Navy, 2018c). Range closures to certain areas of the PMSR due to Navy testing and training activities could increase from the Proposed Action; however, despite a potential increase in periodic closures of certain areas of the range, access to the Channel Islands National Marine Sanctuary (CINMS) and CINP [Channel Islands National Park] would not be affected. The PMSR is used by Navy vessels as well as other recreational boaters. In addition, recreational diving within the PMSR takes place primarily at known

> diving sites such as shipwrecks and reefs in nearshore areas where Navy activities would not typically occur. In addition, the locations of the dive site areas are well documented, dive boats are typically well marked, and diver-down flags are visible from a distance. Navy testing and training activities would be coordinated so that no conflicting uses or vessel traffic would occur with recreational boaters. The NAWCWD would issue an NTM 24 hours in advance of Navy activities as well as daily VHF-FM Marine Radio broadcasts to notify recreational boaters and the public of any range closures associated with testing and training activities.
>
> These notices allow the public to select an alternate destination without an appreciable effect on their activities. In addition, the NPS also maintains a website that notifies the public about closures associated with the CINP (https://www.nps.gov/chis/planyourvisit/conditions.htm). Testing and training activities are not conducted until vessels are clear of the area in accordance with the range clearance procedures. Recreational boaters would be able to adopt alternate routes to avoid areas subject to range closures, so they would not be affected by testing and training activities.
>
> The Navy strives to operate in a manner that is compatible with recreational ocean uses by minimizing temporary access restrictions. The locations of restricted areas are made public and available to mariners. While mariners have responsibility to be aware of conditions on the ocean, direct conflicts in accessibility can occur. If recreational boats are within a training or testing area at the time of a scheduled operation, Navy personnel will only continue operations where and when it is safe and possible to avoid recreational boats. If avoidance is not safe, Navy activity will be delayed or halted until deemed safe. If safety requires exclusive use of a specific area, recreational users may be asked to relocate to a safer area for the duration of the operation.
>
> Impacts on public and recreational uses within the coastal zone are not anticipated since access to restricted areas would be temporary and of short durations (hours). Due to the Navy's standard operating procedures and the expansive Action Area that would be available to the public, accessibility impacts would remain negligible.

The Navy's consistency determination also evaluates other types of potential adverse impacts to recreation, such as disturbance from aircraft overflights and sonic booms:

> Aircraft overflights and sonic booms may be heard from a distance by recreational users in the vicinity, as Navy policy is that sonic booms are limited to altitudes above 30,000 feet and not within 30 NM from shore. Additionally, the Channel Islands regulations prohibit disturbing marine mammals or marine birds by flying motorized aircraft at less than 2,000 feet (609 meters) over the waters within 1 NM of any island, unless coordinated in advance. Therefore, the noise-generating activity will be far from any of the public recreating in the area. Closures due to Navy activities in the CINP and CINMS are highly unlikely. Due to the temporary and short-term duration of the activities (hours), the Navy's standard operating

> procedures, and the expansive Action Area that would be available to the public, accessibility impacts associated with water-oriented recreational activities would remain negligible.

The Commission concurs with the Navy's finding that proposed Sea Range clearances are necessary both for military security and public safety needs. In addition, given the relatively short duration and small size of any affected area at a given time and the availability of many alternate nearby locations from public access and recreation, the Commission also concurs with the Navy's finding that the proposed project will not affect existing public access opportunities on the Channel Islands or the mainland. The Commission thus concludes that the project is consistent with the public access and recreation policies (Sections 30210-30212) and recreational boating and diving policies (Sections 30213 and 30220) of the Coastal Act.

F. Commercial and Recreational Fishing

Section 30234 of the Coastal Act states:

> Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. …

Section 30234.5 of the Coastal Act states:

> The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

In the evaluation provided in the Navy's consistency determination for these policies, the Navy states:

> Southern California's west coast is a leading recreational fishing area. Weather and sea conditions allow for year-round fishing activity. The coastlines around the Channel Islands are popular sport fishing areas; although most kelp beds are within 1 NM of shore, some fishing areas extend as far as 5 NM from shore and include lingcod grounds to the west of San Miguel Island, and kelp beds off the coast of SNI. Commercial passenger fishing vessels frequently offer single-day sport fishing excursions from the Ventura, Santa Barbara, or Channel Islands Harbors (U.S. Department of the Navy, 2002).
>
> The proposed testing and training activities could result in closures of the waters surrounding SNI [San Nicolas Island] for launch events conducted from SNI (up to 40 per year). However, these are likely to be partial area closures, so boats can move to another area near SNI to recreate without leaving the area entirely. Typically, the Navy has conducted an average of four to eight launches annually from SNI (U.S. Department of the Navy, 2018a). Testing and training activities are

> not conducted until vessels are clear of the area in accordance with the range clearance procedures. Additionally, most recreational boaters are typically in nearshore areas of Ventura and Santa Barbara Counties and would not likely be in the clearance area prior to a testing and training activity. While the Proposed Action could increase the number of closures for recreational boaters, these closures would typically be limited to specific areas and of short duration (typically less than 24 hours), and areas would reopen when the testing and training activity is complete. Therefore, impacts on recreational fishing would be less than significant.

The Commission agrees with the Navy that impacts would be minimal, noting that the Navy has historically conducted numerous military testing and training activities throughout the Sea Range without apparent significant conflicts with commercial and recreational fishing. Many of the proposed activities are similar in scope and frequency to the types and amounts of past Navy activities on the Sea Range, and, as the Navy points out, for any particular operating area the tests would be relatively short term in nature. As discussed in the previous section of this report, limited military preclusion of non-military activity is warranted to protect public safety (as well as military security).

The proposed additional launch events at San Nicolas Island (from about eight per year currently to approximately 40 per year), however, would result in more frequent closures of the waters around the island. This would adversely affect commercial and recreational fishing activities in that area. Despite these additional closures, the level of adverse impacts would remain minimal. The area would still be open and accessible for fishing for most of the year and the Navy's commitment for advance notice to fishermen would enable them to plan around proposed clearances or move to nearby areas until the clearance is lifted. The proposed training and testing activities would therefore not appreciably affect the economics of commercial and recreation fishing. The Commission concludes that the project is consistent with the commercial and recreational fishing policies (Sections 30230, 30234 and 30234.5) of the Coastal Act.

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

Naval Air Warfare Center Weapons Division Point Mugu, September 2020. Coastal Zone Management Act Consistency Determination for Point Mugu Sea Range + associated support materials and correspondence.

United States Department of the Navy, April 2020. Draft Environmental Impact Statement/Overseas Environmental Impact Statement, Point Mugu Sea Range.

California Coastal Commission, February 2001. Adopted Findings in support of Consistency Determination No. CD-002-01.

California Coastal Commission, February 2001. Adopted Findings in support of Consistency Certification No. CC-018-07.

California Coastal Commission, August 2018. Adopted Findings in support of Consistency Determination No. CD-0001-18.

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